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The purpose of the study was to determine the paramedical needs for the 57-county area, the types of educational programs indicated, the curricular content for each program, and the facilities required. Questionnaires and interviews revealed that needs ranged from 5 percent per year for dental assistants to 35 percent per year for nursing home personnel. Hospitals estimated increased needs of 62 percent by 1970. Programs selected for immediate implementation were medical laboratory technician, radiologic technologist, medical records technician, medical office assistant, and dental assistant; the associate degree nurs and mental health associate programs were already under development. Other 2-year programs and short-term programs were investigated for future implementation. Programs were organized within the School of Health Occupations under direct patient service, indirect patient service, administrative service, and health related service, and a curriculum design was worked out for each program by an occupational advisory committee in cooperation with the general education committee. The expanding Medical Center gave promise of adequate clinical facilities. Detailed information about programs to be implemented, those under consideration, and equipment costs are included. (JK)

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PLANNING AND DEVELOPMENT OF A "SCHOOL OF HEALTH OCCUPATIONS" FOR AMARILLO COLLEGE

Cooperating Agency:	Amarillo College
Beginning Date:	September 1, 1967
Completion Date:	August 31, 1968
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FOR: Occupational Research Coordinating Unit, Texas Education Agency

Joe L. Lipscomb, M.D.
Geraldine J. Wallace, M.A.

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TABLE OF CONTENTS

PAGE

ABSTRACT

SUMMARY OF FINAL REPORT AND RECOMMENDATIONS FOR THE PLANNING AND DEVELOPMENT OF A SCHOOL OF HEALTH OCCUPATIONS FOR AMARILLO.......... 1

OBJECTIVES.......... 7

RECOMMENDATIONS.......... 9

Curriculum Design and Planning.......... 12

INTRODUCTION AND OVERVIEW.......... 14

HISTORICAL SUMMARY.......... 20

AMARILLO MEDICAL REFERRAL AREA SURVEY.......... 22

Health Manpower Summary and Conculusions.......... 33

DEVELOPMENT OF SCHOOL OF HEALTH OCCUPATIONS.......... 35

Purpose - Philosophy.......... 42
Recommended General Education Course Descriptions.......... 43
Charts.......... 45

SCHOOL ORGANIZATION - SCHOOL OF HEALTH OCCUPATIONS... 47

PROGRAMS INVESTIGATED FOR IMMEDIATE IMPLEMENTATION

Medical Record Science Technology.......... 50
Medical Office Assistant (Administrative-Clinical).......... 60
Dental Assistant.......... 69
Radiologic Technology.......... 79
Medical Laboratory Training Program.......... 88
Mental Health Associate Program.......... 103

PROGRAMS INVESTIGATED FOR POSSIBLE FUTURE IMPLEMENTATION

Inhalation Therapy Technology.......... 113
Food Service Supervisor.......... 118
Physical Therapy Assistant.......... 122

PROGRAMS INVESTIGATED FOR POSSIBLE FUTURE IMPLEMENTATION (continued)

Occupational Therapy Assistant 126
Biomedical Equipment Technician (BMET) 130
Ward Service Manager 135
Optician 138
Prosthetist and Orthotist 140

EMERGING HEALTH OCCUPATIONS INVESTIGATED

Environmental Health Technician 142
Social Work Assistant 144

DESCRIPTION OF HEALTH OCCUPATIONS (Six Months or Less [illegible] Preparation) 148

REVIEW OF OBJECTIVES 154

A SPECIAL RECOMMENDATION 156

SAMPLE JOB DESCRIPTIONS FOR THE SCHOOL OF BIOMEDICAL ARTS AND SCIENCES 157

MINIMAL REQUIREMENTS FOR FACULTY 164

AGREEMENT BETWEEN HOSPITAL AND SCHOOL 166

COST LISTS ON EQUIPMENT

Medical Record Technology 169
Medical Office Assistant 170
Dental Assistant 177
Radiologic Technology 199
Medical Laboratory Technology 202
Mental Health Associate Program 209

APPENDIX 210

List of Tables - Charts - Figures

GLOSSARY 248

BIBLIOGRAPHY 251

POTTER RANDALL COUNTY CITIZENS COMMITTEE CHART 261

ABSTRACT OF THE STUDY

Title: Planning and Development of a "School of Health Occupations" for Amarillo College

Cooperating Agency: Amarillo College, Amarillo, Texas

Investigators: Joe L. Lipscomb, M.D.
Geraldine J. Wallace, M.A.

Beginning Date: September 1, 1967 Completion Date: August 31, 1968

Health manpower needs were determined by survey methods of questionnaires, in-the-field interviews, and schedule designed to ascertain the total number of health workers in a 57-county area. For the technical-vocational level trained personnel, private practicing physicians reported a 12% anticipated increase in personnel, private practicing physicians reported a 5% shortage. Hospitals predicted a 62% shortage by 1970.

Steering, Advisory, and Educational Committees established priority for health occupation training programs for Amarillo College. Programs selected for immediate implementation were: Medical Laboratory Technician, Radiologic Technology, Medical Records Technician, Medical Office Assistant, and Dental Assistant. The A. D. Nurse Program and the Mental Health Associate Program were under development when this project was initiated. Eleven other two-year health technology programs and many short term certificate programs were investigated for future implementation.

A proposed organization of a School of Health Occupations as one organizational unit within the College was made with classification of the health care services training programs into: Direct Patient Service, Indirect Patient Service, Administrative Service, and Health Related Service.

Facilities for establishing health occupation training programs were determined by a review of existing College facilities for required clinical experience, and unused space on campus to convert classrooms into simulated medical laboratories until permanent housing is constructed.

Financial requirements for the initiation of the programs selected for immediate implementation were determined by costs for additional technical faculty, equipment for simulated medical laboratories, and supplies for technical instruction.

Recommendations include consideration for construction of permanent housing for all health care training into one building, recruitment and placement of students, salaries for health care workers in the community, short-term certificate health care training under the Trade & Industrial plan, accurate job descriptions supported by appropriate curricula in all health occupations, and continuation of Advisory Committees when the School of Health Occupations becomes operational.

SUMMARY OF FINAL REPORT AND RECOMMENDATIONS FOR THE PLANNING AND DEVELOPMENT OF A SCHOOL OF HEALTH OCCUPATIONS FOR AMARILLO COLLEGE

Introduction

A research and developmental project entitled "Planning and Development of a School of Health Occupations for Amarillo College" was conducted by Amarillo College from September 1, 1967 to August 31, 1968.

The purpose of this project was to determine what the paramedical needs are, what kinds and types of training and educational programs should be established, what should be the curricular content of the programs, and what facilities are needed to house the programs in health care training for incorporation as one organizational unit in the Amarillo Medical Center by Amarillo College.

Summary

Community interest and involvement in rendering health care services dates back to 1953 with the organization of a Citizen's Committee. One of the major thrusts of this committee was the initiation of deliberate long-range health care planning, including education of persons in health care services. Amarillo, presently a city of about 165,000 population, is a retail trade center as well as a medical service center for a vast geographic area and has been designated a Regional Medical Center. Under development at the present time is the Amarillo Medical Center, a medical complex which when complete, will offer comprehensive medical services.

These factors coupled with effective community leadership provided the backdrop for the request to Amarillo College to investigate the ways and means of incorporating health technology education into this established community college. Health manpower needs were determined by survey methods of in-the-field interviews, questionnaires, and scheduled designed to ascertain the total number of health workers in the 57-county area. "Private practicing physicians who were surveyed to determine auxiliary personnel needs reported anticipated increase up to 12%." Area hospitals reported an 18% shortage in technical and vocational level personnel with a projected 62% shortage by 1970 under present supply conditions. Area Dentists reported severe shortages in auxilliary personnel, and area nursing homes reported a 35% manpower shortage among their technical and vocational health workers. Analysis of survey findings established priority for health occupation training programs possible for Amarillo College. Programs selected for immediate implementation were: Medical Laboratory Technician, Radiologic Technology, Medical Records Technician, Medical Office Assistant, and Dental Assisting. (The A. D. Nurse Program had already been developed and the Mental Helath Associate program was under development when this project was initiated). Programs investigated for possible future implementation were: Inhalation Therapy Technology; Food Service Supervisor; Physical Therapy Assistant; Occupational Therapy Assistant; Biomedical Equipment Technician; Ward Service Manager; Optician;

Prosthetist and Orthotist. Emerging health occupations investigated were: Environmental Health Technician and Social Work Assistant. Survey findings also indicated a need for shorter-term certificate programs and programs designed to reorient previously trained health career people. Priority for short-term programs for immediate implementation established by the findings were: Nursing Assisant, Orderly, Unit Clerk (Ward Clerk), and Surgical Technician.

Concurrent with the investigation of program development was the selection and appointment of a Steering Committee whose members included key community leaders, health facility administrators, and health professionals. After priority had been established for implementation of training programs, the General Education Committee and the Occupational Advisory Committees were appointed to determine curricula and course content. Out of a reservior of curricula collected by the project staff from professional registries and other community college and technical training programs throughout the nation, curricula design for Amarillo College was worked out for each program by its advisory committee. For example, the medical laboratory technician Advisory Committee whose members included two pathologists, three medical technologists, and the head of the Biological Science Department of Amarillo College was charged with working out curriculum and determining course content for the two-year medical laboratory program for Amarillo College. Each Occupational Advisory Committee developed curriculum and course content to meet requirements for final approval by the College's Educational Committee and the Texas Education Agency. After curricula approval, the role of the advisory committee changed into one of assisting in identification of needed equipment and supplies, space for simulated medical teaching laboratories, student and faculty recruitment, and maintaining lines of open communication between college and registries or other accrediting bodies.

A proposed organization of School of Health Occupation within the framework of Amarillo College was developed by the Director of the project.[1] Administrative design provides for close liason between the College, health industry facilities and health professionals from the community. Organizational patterns within the College denotes a classification of programs under four groupings: Direct Patient Service, Indirect Patient Service, Administrative, and Health Related. For example, under Direct Patient Service would fall all levels of nurse training from the two-year A. D. Nurse through the one-year L. V. N. training continuing into the shorter-term training of the Nursing Assistant and the Orderly. The Administrative grouping would include Medical Records Technician, Medical Office Assisting, and Medical Secretary. Indirect Patient Service would include Radiologic Technology and Medical Laboratory Technician. Health Related would include Food

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[1] For a graphic description of the organizational design, see chart.

Service and Biomedical Equipment Technician. The technical faculty would be responsible to both the College and the Occupational Advisory Committee to insure an on-going evaluation of the quality of the technical instruction. Selection of the technical faculty would be under the scrutiny of the Dean of the School of Health Occupations.

A combination of facilities required to satisfy the initiation of health occupation programs in Amarillo College are: (1) Classroom and laboratory space for absorption into existing educational course offerings in the general and supportive education, (2) Available teaching space in neighboring clinical facilities to provide required clinical experience necessary in all health care training, and (3) On-campus simulated medical laboratories for technical instruction. Review of existing facilities revealed sufficient space available in the existing College planning for general and supportive education to absorb the complement of students who would be admitted to the health care training programs. Present clinical facilities in Amarillo, which would be under a shared responsibility with the College through contractual agreement, have sufficient space to accommodate a first year class in each proposed health occupation program of a maximum of 15 students. Adding a second year class of 15 students into the second year of a program would allow for clinical space for a maximum of 30 students in each program when the school of health occupations becomes fully operational. More clinical facility teaching space will become available as the Amarillo Medical Center progresses through its developmental plans. Investigation into space for simulated medical laboratories on-campus revealed that space could be released temporarily from already designated college planning for installation of equipment for initiation of health occupation programs; however, as soon as permanent building is available to house all health occupation programs, the on-campus simulated medical laboratory space would be released for its original designation.

Financial requirements for the intitation of the proposed health occupations programs in Amarillo College were determined by costs of: (1) Additional technical faculty, (2) equipment for simulated medical laboratories, and (3) supplies for technical instruction.

OBJECTIVES

The specific objectives for achievement by the Project were:

1. Collect and evaluate existing data and information on para-medical training programs in Texas and in other states with application to the problem.
2. Examine and study the para-medical training programs presently in operation in the Amarillo area.
3. Study the unfilled needs for para-medical training programs in the Amarillo area.
4. Project present and future needs in the Amarillo area in terms of trained para-medical personnel.
5. Classify and correlate para-medical training programs as to level and duration of training.
6. Determine and establish the bases and content for new and emerging training programs required by advancing technology and research in the health professions.
7. Ascertain what courses are common to all health occupations programs.
8. Define and outline the spedific para-medical programs needed in the Amarillo area.
9. Study the needs of the para-medical programs relevant to Amarillo in terms of laboratory and classroom facilities.
10. Plan in schematic form the laboratories, classrooms, and supporting areas needed to house the projected para-medical programs in a building, or buildings, on the Amarillo Medical Center site.
11. Ascertain the nature and type of equipment and furniture needed to serve the programs to be housed in the projected facilities.
12. Project the staffing needs in terms of faculty and supporting personnel.

13. Determine the annual operating budget needed to finance the paramedical training programs.

14. Project the financial requirements for the construction of the facilities, equipping the classrooms and laboratories, and for the operation of the "School of Health Occupations."

RECOMMENDATIONS

1. It is recommended that the following two-year health occupation training programs be initiated in Amarillo College in September, 1968:

   (1) Medical Records Technician
   (2) Medical Laboratory Technician
   (3) Medical Office Assistant
   (4) Radiologic Technology
   (5) Dental Assistant

   (The A. D. Nurse program has already been approved for initiation in September, 1968.)

   It is recommended, under the T & I plan of the College, that the following short-term certificate programs be offered beginning in September, 1968: Nursing Assistant, Ward Clerk, Orderly, and Surgical Technician.

2. It is recommended that utilization of the Steering Committee and the Health Occupational Advisory Committees be continued after recommended programs are initiated in Amarillo College.

3. It is recommended that curriculum design and course content be under continuous evaluation by the Advisory Committees and the technical staff to allow for modification and revision due to rapid changes in health technology which affect job function.

4. It is recommended that wages for salaried personnel in the health field be comparable to those paid for jobs in the community with comparable skill and training so that recruitment of students into health occupations and retention of trained personnel can be stabilized.

5. It is recommended that all health occupational training be organized into one organizational unit under the designation "Amarillo College School of Biomedical Arts and Sciences."

6. It is recommended that the completion of planning and designing of the buildings for permanent housing and facilities in the Medical Center site continue utilizing the information regarding equipment, space needs, and schedule for program implementation.

7. It is recommended that recruitment of students into health occupations be directed by a "Health in Action" approach by opening, to all persons in the community, health facilities for observation, visitation, and appreciation.

   It is recommended that Amarillo College design placement and performance testing for accommodation and recognition of those persons trained in military health technology training programs.

8. It is recommended that the School of Health Occupations establish and maintain a direct liason with a University possessing a Professional School of Medicine, Dentistry, Allied Health Professions, and other health education offerings. A similar relationship and coordination with secondary education health occupation education planning and development is indicated for wider perspective in health care training planning.

RECOMMENDATIONS: continued

9. It is recommended that the School of Biomedical Arts and Sciences be available to the health care community to be used for on-going educational short courses, e.g., workshops, institutues, seminars.

CURRICULUM DESIGN AND PLANNING

Curriculum design is an integral part of the organization of the School of Health Occupations. The Director of the School of Health Occupations may use a simple formula of 50% general and supportive education and 50% technical education designing in college courses and directed clinical experience time allocation. The formula application is directed to an accurate job description and performance requirements. The Advisory Committee is to review and maintain surveilance of the curriculum as the rapid modifications occur in the job description. This responsibility is further discharged by coordination with the curriculum requirements as expressed by the Councils on Education of the A.M.A., A.D.A., and A.N.A. For the two-year programs a suggested guideline for curriculum planning follows.

GUIDE LINES

I. In curriculum design for the directed laboratory experience in both hospital and college simulated laboratory, we recommend consideration of the following:

   1) That emphasis be placed on procedures mastered in lieu of clock hours spent.

   2) That actual mileu working experience in the hospital laboratory be proportioned by the week during the college academic year with planned performance experience.

   3) That sustained acclimatization to the work situation in the hospital laboratory be offered in the summer or other selected terms under

the supervision of the college technical faculty with the Hospital Laboratory technologist who also has a faculty designation.

4) That students be given a practical examination by the Teacher-Coordinator of the technology including principle, technique, and sources of error before hospital laboratory assignment. In addition scheduled evaluation by the Director of the Hospital Laboratory should be made.

Objectives to be accomplished:

1) Provide an ecomony of student time, eliminating the laborious repetition of the old methods and still allow the student time to acquire the developed skill performance necessary in the clinical situation.

2) Produce a semi-professional technician who may perform in the recognized middle role in the laboratory.

3) Allow the professional bodies to review the total learning processes of the technology. In turn, the educational institution should redesign the general and supportive education to complement the development of the technician within two years.

4) A coordinated college-hospital two-year program of the design would provide a more meaningful apportionment of the training time than the clock hour designed hospital program.

5) Provide a means for the student to acquire his technology concurrent with his general and supportive education. For example: Hematology scheduled concurrently with Anatomy & Physiology, English, Algebra, and a course of the student's own choosing for the first semester in a two-year program.

6) Fulfill the responsibility of the educator as stated by Jacques Maritain:
"The education of tomorrow must provide the common man with the means for his personal fulfillment, not only with regard to his labor but also with regard to his social and political activities in the civil commonwealth, and to the activities of his leisure hours."

II. We also recommend certification by the Registry of the student upon completion of the two-year program.

INTRODUCTION AND OVERVIEW

The purpose of this project was to determine what the paramedical needs are, what kinds and types of training and educational programs should be established, what the curricular content of the programs should be, and what facilities are needed to house the programs in health care training for incorporation as one organizational unit in the Amarillo Medical Center by Amarillo College.

A review of the history of Health planning, facilities and services in Amarillo, the region it encompasses, and the part played by interested individuals, citizens' committees, local governmental agencies, professional societies and the cooperative community efforts presents an early recognition of the need for the education and training of persons to man these facilities. This presents the role also of Amarillo College and its Board of Regents when asked to cooperate in the education and training of health workers in the vocational, technical, and semi-professional areas of health manpower training. Thus is presented the setting for this project. The synoptical history with particular emphasis on the education of the health worker includes a review of the progress of this study until July 10, 1968.

Information for planning was secured from the local health facilities and the directors of presently existing health education programs. The files of the "Hospital Committee" of the Amarillo Area Foundation information from previous local surveys and studies were made accessible. The planning that had been performed by these and by the committees of the Potter-Randall Citizens' Committee aided in establishing procedure for investigation.

At the State level, information from the Health Occupations division of the Texas Education Agency, The Texas Hospital Association and the State Health Department was readily available. The experience in health occupational education at El Centro Junior College, San Antonio Junior College in Texas and the experience of the Forest Park Junior College of the St. Louis Junior College District was shared facilitated planning.

At the national level, the information from the American Association of Junior College in Health Occupational Education, the accrediting bodies and Directors of Education of the professional organizations of the Technologies and the Professions, and particularly the Council on Education of the American Medical Association and of the American Dental Association, were essential sources. Direct correspondence with Community Colleges and Technical Schools in California, Florida, Maryland, Kentucky, and other states was fruitful.

The literature of the development of health occupational education programs and results of studies, research, and recommendations is available mostly in brochures reports, and individually published bulletins sponsored principally by the Office of Education of the Department of Health Education Welfare and other federal agencies. Abstract summaries from ERIC were a reference source.

Health Manpower Needs for Amarillo and the region it serves were sought by interview and by questionnaire surveys directed to the largest employers of health manpower; the practicing physicians, the hospitals and the nursing-convalescent facilities of the area.

The information received from these inquiries formed a basis for the determination of certain programs for early development. The Steering Committee recommended early in the study the development of these programs, which are apparent from interview and from the 20 year participation and experience in the health industry of Amarillo of one of the investigators, to the Board of Regents, the initiation of implementation planning.

All programs were studied by a group of criteria which were presented and accepted by the Steering Committee. These criteria for program development in addition to any apparent need for the health occupational worker served as a guide for choice of programs for development.

The actual development of programs involved the following order procedures: the selection of Advisory Committees for each, research and selection of courses for curriculum for each program, determination of equipment and supply costs, location of clinical facilities for educational and directed experience, and choice of faculty.

HISTORICAL SUMMARY

Formal education and training of personnel for health occupations has been conducted in Amarillo, in addition to the in-service programs for entering workers and continuing education in the local hospitals since 1909.

St. Anthony	
School of Nursing (diploma R.N.)	1909[1]
School of Medical Record Science (R.R.L.)	1951[2]
School of X-Ray Technology (R.T.)	1961
School for the Laboratory Assistant (C.L.A., A.S.C.P.)	1963
Northwest Texas Hospital	
School of Nursing (diploma R.N.)	1924
School of Medical Technology (M.T., A.S.C.P)	1954
Amarillo College	
Pre-nursing Curriculum for the 2 diploma R.N. Schools	1954[3]
Vocational Nursing Program (L.V.N.)[4] with the two hospitals	1951

Recognition and planning for health, recreation and welfare needs, and facilities was first initiated by the United Fund of Amarillo and the Health

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[1] To be closed and facilities to be utilized by the A.D. Nursing Program of Amarillo College, Fall 1968.

[2] School Closed 1954.

[3] Until 1955, these students received an A.D. degree from the Amarillo College.

[4] In many states the designation "L.P.N." is used. "Licensed Practical Nurse"

Committee of the Chamber of Commerce. Acting upon a resolution of April 14, 1953, of the United Fund, the Amarillo Chamber of Commerce, Amarillo School Board, City of Amarillo, Potter County Commissioners Court, and a Citizens Committee of 12 representative citizens it was agreed to sponsor a survey of the needs in these areas by the R. N. Evjen Associates.[1] In order to enact the recommendations from this survey, the Potter Randall County Citizens Committee[2] was organized (of 180 members) and permanent committees for the three areas of health, education, and welfare were formed, called councils, along with ad hoc committees as deemed necessary, (1954).

To the Citizens Health Council was assigned the task of implementing the health planning recommendations. The most urgent task was the developing of additional hospital beds and the public health unit to serve the two related counties geographically splitting the City of Amarillo. It was soon concluded that the information from the first survey was quite useful, but further assessments of Health needs in particular by professionals were necessary. The James A. Hamilton Associates was commissioned (1956) to assist in health and hospital study. Additional sponsoring groups for this study included the City of Canyon and the Randall County Commissioners Court. Implementing the recommendations and finding from this group led to the development of the first Hospital District (demanding a state constitutional amendment) in Texas and the planning of a Regional Medical Center.[1] The Citizens Health Councils avowed purpose was to avoid emergency or crisis planning and action, insofar as possible as the community developed. In this Hamilton Survey was the first documented recognition of planning for education of health workers, both professional and semi-professional,[2] and the recommendation was that the education planning be established and centrally directed from one hospital or unit and that plans for housing of student personnel be included. The tasks and duties of the Hospital Committee of Citizens Health Council became so involved and complex that the Hospital Committee was enlarged and transferred to the Amarillo Area Foundation (1956), a Community Trust which had been emerging and developing concurrently.[3]

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[1] Evjen and Associates, "Amarillo Survey Project of Health, Recreation and Welfare Services Report," 1953.

[2] See Appendix

From their activities in planning for a Medical Center and the Hospital Facilities in the metropolitan area, they have proceeded to the present, including, planning for a medical and a dental school in the center with appointment of appropriate ad hoc committees as well as the development of the High Plains Baptist Hospital, (a $6,000,000 voluntary funding). Acquisition of a 400-

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[1] Texas State Plan for the Construction and Modernization of Hospitals and Related Medical Facilities," The Texas State Department of Health, Austin, Texas, 1967, Vol.2, Chapter III, page 645. Amarillo designated Regional Center, Region W, Service Area Program, including 24 counties.

[2] "A Plan of Hospital and Health Care For the Amarillo Area, Texas," James A. Hamilton Associates, Minneapolis, Minnesota, 1956, page 18.

[3] See Appendix

acre site through the Potter County Commissioners Court and others made much of this possible.

The necessity for planning of education for the semi-professional and occupational health worker was recognized by the Hospital Committee and a letter was directed to the president of Amarillo College, March 17, 1966, to consider establishing a School of Health Occupations for the Medical Center. This was in recognition of the role of the community college in developing and producing such education.[1] The Board of Regents of Amarillo College in May, 1967, requested designation of space of about five (5) acres for the School of Health Occupations and health-related education in the Medical Center tract. The Executive Committee of Amarillo Area Foundation committed the 5-acre tract March 18, 1968,[2] (though having designated the tract in June, 1967). The campus consisting of a four-large-building facility of the School of Vocations of Amarillo College adjoins the Medical Center tract. With the funding aid of theTexas Education Agency this research and development project was made possible and begun September 1, 1967.*

In June, 1968, the Hospital Committee, realizing the need for Regional Health Planning, found that they were unable for legal reason related to the incorporation of the Amarillo Area Foundation to continue as the center for the Regional Planning Agency for Health. Their jurisdiction was limited to the confines of the Amarillo Medical Center itself. Consequently, the Regional Health Planning was returned to a special ad hoc committee of the Potter-Randall Citizens Committee with plans for the employment of a Coordinator. Plans for education of Professional Health Personnel and preparation of Health Occupational Workers would be only a part of this Regional Health Care Committee's duties.

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[1] Community College and Technological education and training of the semi-professional and vocational health occupations recognized by the House of Delegates of the American Medical Association in 1966.

[2] Minutes, Executive Committee of the Amarillo Area Foundation, March 18,1968.

*Historical notes summarized from the chronological data files of the Hospital Committee of the Amarillo Area Foundation: access through the courtesy of Mrs. Louise Evans.

Concurrently, the Board of Managers of the Northwest Texas Hospital District found that it was necessary to begin implementing plans for the presence of a physician in the Emergency Room of the Hospital on a 24-hour basis (the Northwest Texas Hospital at this time has no interns nor resident physicians) since the Northwest Texas Hospital has tentatively been designated as the Emergency Receiving Center for the City of Amarillo and Panhandle or Tri-State Area (July 5, 1968) and also the planning of a $500,000 outpatient facility to replace its inadequate District Clinic. These facilities will, too, demand more trained workers.

The Mental Health and Mental Retardation Board established in 1968 is continuing its planning regarding the utilization of the Psychiatric Pavilion of the Northwest Texas Hospital, the Kilgore Children's Psychiatric Center and Hospital, the Texas Mental Health & Mental Retardation State School, and other facilities of the area, with the aid of a State Grant.

AMARILLO MEDICAL REFERRAL AREA SURVEY

A survey was conducted in the Texas Panhandle and border counties of Oklahoma, Kansas, New Mexico, and Colorado to determine health manpower needs which could be met through training programs developed within Amarillo College. The perimeter of the region covered includes approximately fifty-seven (57) counties, usually referred to as the Amarillo Medical Referral Area.[1] The Amarillo Medical Center is considered the natural locus for referral from this five-state region and will become increasingly more so as the planned health services continue to develop within the Medical Center. The methods used to conduct this survey were mailed questionnaires, direct interviews and schedule constructed by the project staff. The schedules were used by representatives of the Texas Employment Commission in a cooperative effort to determine manpower need for nursing homes and extended care facilities.

Methodology

Preliminary investigation of surveys conducted in Texas and in other parts of the United States to determine personnel needs indicated the health services to be surveyed in this area. Selected personnel questionnaires and schedules were then designed for hospitals, practicing physicians--both Doctors of

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[1] Appendix (Fig. 1)

Medicine and Doctors of Osteopathy, and nursing homes and extended care facilities.

Direct interviews were conducted with leaders in related special services, such as, physical rehabilitation units, mental health and mental retardation, speech and hearing clinics to determine their personnel needs which would fall within the scope of Community College technical training. In addition, direct interviews were conducted with U.S. Public Health authorities.

Private Practicing Physicians' Survey

Preliminary inquiry into the selection of type and purpose of the questionnaire to be submitted to this group indicated that it should serve dual purposes; (1) to find out the number of auxiliary personnel presently employed with estimated needs projected to five years, and (2) to measure the interest in the use of community college trained personnel. A decision was made to contact all the known practicing physicians in the area. The total population is sparse--approximately 750,000 in the area.[1]

Questionnaires, accompained by a cover letter,[2] were mailed to 587 M.D.'s and 58 D.O.'s. Names of the M.D.'s were taken from membership lists of the Panhandle District Medical Society and participating physicians from out-of-state counties; names of the D.O.'s came from the membership lists of

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[1] Population Tables - Appendix

[2] See Appendix - Practicing Physicians Questionnaire and Cover Letter

District I of the Texas Association of Osteopathic Physicians and Surgeons. Since these groups organize along boundary lines designated by their state organizations, the geographic area covered is slightly different for the two practicing physician's groups (Figures 2 and 3).[1] Three weeks time was allowed for response. Within the alloted time, 64.4 per cent (378) of the M.D.'s had responded; and 62 per cent (36) of the D.O.'s had responded. As reported by respondents, the total auxiliary personnel employed by practicing physicians as of October, 1967, was 981 persons as office-clerical, nursing, and lab personnel.

Auxiliary Personnel Employed		873
Engaged primarily in office-clerical tasks		308
Engaged primarily in medical stenography		87
Engaged primarily in nursing activities		371
Registered Nurses	135	
Licensed Vocational Nurses	117	
Neither R.N. nor L.V.N.	119	
Lab Technicians		47
X-Ray Technicians		45
Lab and X-Ray Technicians combined		50
Unclassified auxiliary personnel		60
Expected Increase or Decrease in Personnel:		
Next five years	112 Increase No Decrease	
NET TOTAL		112

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[1] See Appendix

Findings: Amarillo Medical Referral Area, Practicing Physicians Questionnaire

Distribution of Auxiliary Personnel: Table 4

	M.D.'s Percent of Total		D.O.'s Percent of Total	
Office-Clerical	35%		38%	
Primarily Nursing	43%		50%	
. . . . . . R.N.		36%		6%
. . . . . . L.V.N.		32%		46%
. . . . . . Neither		32%		48%
Combination(Office-Clerical-Nursing)	11%		4%	
Lab (all personnel)	11%		8%	
	100%		100%	
Total N = 873		Total N = 108		

From the above information, the auxiliary personnel now employed by private practicing physicians indicate, for the 64% response, positions for 981 persons, all of whom could conceivably be trained in the community college. In response to the question "Would you use a training program for medical office personnel?", the following results were obtained:

	M.D.'s	D.O.'s
Yes	98	15
Possibly	88	8
No	16	2

Of those responding, about 50% (113) answered "yes," 42% (97) answered "possibly," and 8% (18) said "no."

Salary distribution for auxiliary personnel in practicing physician's offices indicate wide ranges between the groups (Table 5)[1]. In the office-clerical group, 58% fell between $250 and $350 per month with 22% below $250 per month. Among those who were primarily employed in nursing duties, the R.N.'s were the highest paid with 51% between $350 and $450 per month and 22% above $450 per month; the greater number of L.V.N.'s--65%--fell within the $250 to $350 per month category; and those who were engaged in nursing duties but who were neither R.N.'s nor L.V.N.'s were found at the lower end of the salary scale with 65% making less than $300 per month. Medical laboratory personnel showed 85% at $350 and above with 46% of the total at $450 and above per month. X-Ray Laboratory Personnel showed 35% between $300 and $400 per month and 58% at $400 and above.

Nursing Home Survey

In order to determine the extent of need for personnel in nursing homes and extended care facilities, a survey was cooperatively conducted with the Amarillo District of the Texas Employment Commission. Discussion with the District Manager of the Commission revealed that very little information was available to their office regarding health occupations. Therefore, a decision was made to share planning of this survey with the Amarillo District of TEC. A schedule was then designed and a cover letter was written by the director of the project to accompany the schedules as they were distributed to area representatives of the District Employment Commission.[1] A month was allowed for each county representative, of this 46 country area of the Texas Panhandle, (see Fig. . 4),[2] to collect the data. Choice of questions involving projected needs and salary scales differed from other surveys conducted because of the cooperative work with the Employment Commission. Needs for the Employment Commission are usually made on a 12 month basis rather than on 3 or 5 years. Preliminary inquiry into salary scales for nursing home personnel revealed a strong reluctance to discuss salaries by several nursing home administrators; therefore, salary data was not collected for this group.

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[1] (Table 5) - Appendix

Findings for Nursing Homes and Extended Care Facilities

Thirty-five nursing homes extended care facilities were included in the survey, representing 1,696 beds. The total number of beds was classified as follows: 568 extended care beds, 591 attendant care beds, and 536 undefined beds. See Table 6[3] for a summary of personnel needs according to present number of employees, present vacancies, anticipated needs in 12 months, and employees who would be added if they were available and if it was feasible.

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[1] Nursing Home Schedule and Cover Letter - Appendix
[2] Appendix (Fig. 4)
[3] Appendix (Table 6)

From the final totals of this survey the following results were obtained as of December 1, 1967:

Number of employees	1,049
Number of vacancies	49
Number of additional employees anticipated in 12 months	373
Number that would be employed if feasible and available	279
Expected increase in employees in 12 months.	35%

From the data it should be noted that the nursing homes employ aides in greater number than any other designated group - 45% of the total are nurse aides. The L.V.N. represents 15% of the total personnel. Interviews indicated the anticipated use of occupational therapists, physical therapists, and dieticians because of new federal regulations related to Medicare. Requests for trained vocational, short-course personnel such as nurse aides, orderlies, and dietary aides were noted more often than requests for technical personnel who require more training. From observation and discussion with administrators, information on salary ranges was difficult to obtain; however, those who discussed wages indicated minimum wages and high turnover in most of the categories.

Selected Hospital Personnel Survey

A survey was conducted in the Texas Panhandle and border counties of Oklahoma, Kansas, and New Mexico to determine needs for selected hospital personnel.

The questionnaire for hospitals was designed in two parts. Part I[1] was designed to determine (1) the number of employees in those categories in which the level of training fits into the community college, (2) the number of professional employees in the categories selected in order to ascertain the ratio of professional to semi-professional under the present conditions, (3) job combination within the hospital, (4) number of full-time and part-time personnel, (5) volume of laboratory and x-ray procedures per hospital per year, and (6) salary of each employee. Part II[2] of the questionnaire was designed to summarize for each hospital the following conditions: (1) number of employees presently needed in each category to afford optimum care, including nursing[3] and (2) number of employees anticipated by 1970 to afford optimum care.

The sample for this survey included thirty-five hospitals, representing 2,349 beds. Personal interviews were conducted with twenty-two of the thirty-five hospital administrators.

Invitations were extended to the adminsitrators of all thirty-five hospitals to the regularly scheduled meeting on November 15, 1967, of the Panhandle Division of District I of the Texas Hospital Association. The geographic area for the survey in Texas follows the organizational pattern for the Texas Hospital Association (Fig. 5).[4] Hospitals from border counties in the other states in the region were selected by the project staff. The questionnaire was introduced at the November 15th meeting for members and guests to examine. Each hospital attending the meeting was issued the appropriate materials and those not in attendance were mailed the same materials accompanied by a letter of instruction by the Director of the project. The hospitals were asked to return the information within one month.

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[1] See Appendix

[2] See Appendix

[3] Nursing positions were excluded from Part I of the questionnaire because of the numerous recent studies of nursing in our area.

[4] Appendix (Fig. 5)

Findings: Selected Hospital Personnel Survey

By December 15, 1967, thirteen hospitals--representing 1,689 beds (62% of total beds) - had responded to the questionnaire. However, interviews in the area with nine hospitals - those who did not return the questionnaire, gave an additional coverage to bring the total number of hospital beds covered to 86% of the total. Response to the survey was excellent for the larger hospitals - those of 100 bed and over (Table 7).[1]

The small hospital - those under 50-bed - seemed to feel that too much "paper work" was involved in the questionnaire; however, the administrators of these hospitals were most cooperative and enthusiastic when interviewed directly about personnel needs and possible training programs in the Amarillo College. Table 8[2] summarizes the selected hospital personnel according to present number employed, additional needs to afford optimum care, and estimated needs by 1970 for the Amarillo Medical Referral Area.

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[1] Appendix (Table 7)

[2] Appendix - Table 8.1 and 8.2

The total number employed in selected hospital positions, represented by a 62% response to the hospital questionnaire, was 1,124 persons with 203 additional persons needed to afford optimum care. The shortage for the Amarillo area is reflected in these figures as 18%--shortages reported in a survey conducted by the American Hospital Association in April, 1966, indicate a shortage for the State of Texas of 11% and for the United States 19%.[1] Estimated needs for the United States by 1975 show an increase of 65%.

Job combinations[2] occurred more often in the under-75-bed hospitals with the frequency of combinations greater in the Medical Records Administration Division in which clerical and stenographic personnel served more than one function. In the under-50-bed hospitals it was not unusual to find one person serving both laboratory and x-ray departments.

Salary scales, as reflected in the Salary Distribution Tables,[3] range from extremely low wages to moderate wages dependent upon positions. By interview, it was learned that few fringe benefits are offered hospital workers.

Dental Assistant Needs Survey[4]

The Panhandle District Dental Society and the Potter-Randall County Dental Society conducted a survey of the Texas Panhandle - Approximately 32 counties -

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[1] Appendix - Table 8.1 and 8.2

[2] Appendix - Table 8.1 (Personnel in Hospitals, Texas, 1966) and Table 8.2 (Personnel needs in Hospitals, United State, 1966-1975) - comparisons to state and national hospital personnel statistics.

[3] Appendix

[4] This survey was a telephone survey conducted in December, 1967.

to ascertain present and future needs for dental auxiliaries, in particular the Dental Assistant. A summary of the results is as follows:

Practicing Dentists.		168
General	148	
Specialty	20	
Dental Assistants		296

Expected Increase in 12 months -- 5%

According to this survey, there is a 25% turnover among the employed dental assistants per year - some move away while others change to another job. Less than 10% have been with the same dentists for a ten-year period. There are approximately 25 certified Dental Assistants in the Panhandle area. Salaries ranged from $185 to $225 per month for untrained persons. Entering salary for trained (2 year program) dental assistant was from $300 to $350 per month.

HEALTH MANPOWER

SUMMARY AND CONCLUSIONS

The current manpower information developed through the in-the-field interviews, questionnaires, and survey of literature confirmed needs in each of the health services surveyed.

The problem in the Amarillo area, as across the nation, is one of staffing key positions in the health industry. For example, the most acute shortages were reported in the hospitals with essential trained personnel in greatest demand in the Medical Record and Medical Laboratory Departments, in particular, The Medical Record Technician was the position requested by every hospital administrator interviewed. This position is "key" in hospitals and will become increasingly more important in all health facilities regulated by recent federal legislation.

Needs were established and predicted for new categories, e.g. Biomedical Engineering Technician, Inhalation Therapist, and Ward Manager, which are developing in the medical care field. Private practicing physicians, who employ a total of 981 auxiliary personnel in the Amarillo area, expressed need for trained office assistants - especially the Administrative Office Assistant. Nursing homes and extended care facilities expressed the greatest need for vocationally trained personnel e.g. Licensed Vocational Nurse, Nurse Aide, Orderly and Dietary Aide; however, Medicare regulations require professionals in Dietetics, Medical Records, Physical Therapy, and Occupational Therapy--

semi-professionals in these areas will become a part of the personnel in these facilities.

The Amarillo Area Dentists established a need for Dental Assistants through a survey in the area. Present rehabilitation programs and planned rehabilitation services indicate growing demands for technicans trained in Mental Health, Physical Therapy, and Occupation Therapy. At the present time, the limited number of professionals in Physical Therapy and Occupational Therapy in this locale prohibits the training of semi-professionals who must be trained under "registered" professionals.

Additional needs to provide optimum care by hospitals presented much the same picture in the Amarillo area as it did across the nation.[1] Nationally, the American Hospital Association found in 1966 that the needed increase for all hospitals was 19% for selected personnel. This survey, conducted for the Amarillo area hospital in 1967 found an 18% additional personnel needed to afford optimum care.

Estimated needs ranged from 5% per year for Dental Assistants to 35% per year for nursing home personnel in the Amarillo area survey. Hospitals estimated increased needs of 62% by 1970 in the Amarillo area while nationally hospitals estimated increased needs of 62% by 1975.

Salaries, reflected by wage distribution scales, were lower than those paid by other regional industries for commensurate training time and skills demanded.

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[1] Appendix - Health Manpower - National Overview of Present Supplies & Needs

DEVELOPMENT OF SCHOOL

Selection of Programs for Development:

Throughout the preliminary investigation and as questionnaire and survey data were compiled, it became apparent that program selection for development would need to be made by a set of criteria including manpower need. Many occupations investigated revealed a manpower shortage sufficient to justify filling the needs by establishing training programs; however, the weight of other factors gave the project staff sufficient cause to devise a set of criteria. These criteria are as follows:

(1) Is there an affirmed need for the occupation program?

(2) Does the program's educational and training demands fit the college under its charter and designation as an educational institution?

(3) Is the program available elsewhere in the area?

(4) Are adequate clinical facilities and health professional available in the community for the cooperative teaching and experience necessary for the program?

(5) Does the educational institution have adequate classroom space, laboratory, and facilities to add the program?

(6) Are potential students available for recruitment to the program?

(7) Is the cost of the program within the financial resources of the educational institution?

In addition to meeting these criteria, it became necessary to establish a priority for implementation; first priority would be given those programs with good potential for development and support in the community. Programs with less immediate potential would be presented for periodic review for future implementation; for example, the emerging occupations e.g. Biomedical Equipment Technician and Ward Manager provide the health industry with new job categories not yet established but which loom up ahead. Better utilization of manpower within the health industry will call for reorganization with the contant assessment of program planning by educators in the health field.

Using the above criteria as a guide, five career areas were selected and recommended as having good potential for development. (The A. D. Nurse program had already been developed and the Mental Health Associate Program was under development by the College when this project was begun.) A summary description of each program was prepared and submitted to the college administration and faculty council for their approval and recommendations.

Selection of Steering Committee:

Concurrent with the investigation of program development, members for the general advisory committee or "Steering Committee" as it is called, were selected from the community and invited by letter from the President of the College to participate in an advisory capacity for the total health occupational program development for the entire length of the project. Those persons selected fitted the following characteristics:[1]

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[1] Appendix - Steering Committee Members

(1) Recognized community lay leader.

(2) Authority in some phase of the health industry.

(3) Person with previous experience in hospital-based program

(4) Hospital Administrator

(5) Local health professional.

(6) College faculty.

(7) President of College.

(8) (to be added, after selection, the chairman of each Occupational Advisory Committee.)

Selection of Occupational Advisory Committees:

Potential advisory committee members for each occupational group chosen to develop were interviewed for their interest in the professional field involved. Persons particularly interested and knowledgeable were selected to serve on these committees.[1] Official appointment was made by a letter from the President of the College.

Duties of the Advisory Committees:

The function of each of the health occupations advisory committees is to advise college administration and identify for the educational instruction the specific functions are:

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[1] Appendix - Occupational Advisory Committee members.

(1) Subject matter to be included in the technical courses. Identification of specific job skills for job entry.

(2) Number of graduates which could be placed.

(3) Maintain communication channel between professional registries or other accrediting organizations and college administration.

(4) Identify clinical facilities available for training needs.

(5) Recommend competent personnel from health industry as potential instructors.

(6) Determine the necessary facilities; including estimate of cost of equipment and supplies. Estimate space needed for campus laboratories as well as space needed in each clinical facility to accomodate students in required practicum.

(7) Help evaluate program of instruction after program is established in a continuing process.

(8) Keep the college informed on changes in the specific technology so that the information about changes in supply and demand in the labor market is always available to the college.

Advisory Committee Relationship to the College

Research of established training programs across the nation, by the project staff, provided a reservior of curricula designed for health occupational training in community colleges and technical training schools. Out of this vast array of materials a tentative curriculum was constructed for each program under consideration. When Guidelines were available from professional registries, they were closely adhered to in curriculum construction. Whenever possible, the tentative curricula for the specific training programs were distributed to each member of the Occupational Advisory Committee before the scheduled meetings, allowing for better usuage of time in committee meetings for individuals to express carefully thought out modifications. Revisions were then made in committee meetings with the consensus of the groups prevailing as to what should be included. Among some advisory committees, the curriculum was acceptable after one or two meetings, e.g. in the Medical Record Technician program, while other committees needed extensive work sessions - in particular, the Medical Laboratory Technician program and the Dental Assistant Program.

When the curriculum reflected the committee's thinking, then it was routed through the academic committees of the college for approval and recommendations. If the changes were minor, then the curriculum was presented to the Steering Committee for final approval and recommendation for implementation; however, if changes affected course content or sequence then it was checked again by the advisory committee before being presented for final approval.

After curricula approval, the role of the advisory committee changed into one of assisting in identification of needed equipment and supplies, space for simulated medical teaching laboratories, student and faculty requirements, and maintaining lines of open communication between college and registries or other accrediting bodies.

General Education Adivsory Committee:

In addition to the occupational adivsory committees, and Educational Advisory Committee was appointed from the College whose committee membership included the Dean of the College, and the Heads of the Departments of English, Social Science, Psychology, Mathematics, and Biological Sciences. This committee made recommendations for a core program in general education for all the health technologies. From established course offerings at Amarillo College, the following general education courses recommended are:

	Sem. Hrs.
English (131, 132, Freshman Compositon)	6
Social Science (Govt. 239, Survey of Government in the U.S.)	3
Sociology (237, Social Principles & Institutions)	3
Psychology (233, Psychology of Adjustment)	3
Mathematics (131, College Algebra, or 031, Intermediate Algebra)	3
Natural Sciences (Zoology 133-134, Human Anatomy and Physiology)	6
	24

Since the programs selected for development do not lend themselves to a common semester curriculum - due to differences between the curricula patterns which are usually regulated by registry and accrediting requirements - it did not seem advisable to try to do more than recommend a balanced general education core program to be blended with the technical training. It was the consensus of the committee that this minimal general education base would afford a student an opportunity to change careers with a minimum of loss in basic course work as well as provide a base for advanced degrees.

Other functions of this committee were: review each program curriculum and recommend changes when needed, visit clinical facilities to observe technicians at work to become acquainted with performance levels, place in the health team, etc. of each of the programs to be developed, and through evaluation of needs recommend redesign of some of the general education offerings. New course design for technical programs in the health technologies is under consideration in the Departments of English and Social Science for future implementation.

SCHOOL OF BIOMEDICAL ARTS AND SCIENCES

PURPOSE

To provide education for the student citizen in Health Occupations and Health Related Sciences in cooperation with the Amarillo Medical Center and the Health Institutions of the community and the State of Texas.

PHILOSOPHY

Planning, execution and evaluation of health education shall follow the philosophy that a vocation in health is chosen and prepared for with a dedication of the individual to the dignity and mental and physical well-being of the Person and Community of Persons in health protection and in illness. The obligation assumed is one of service; which demands humility, courage of conviction, sensitivity to change, and the discipline of team performance.

RECOMMENDED GENERAL EDUCATION COURSE DESCRIPTION

Course descriptions of the general education courses recommended by the General Education Advisory Committee for all health technologies are as follows:

English (131, 132) Freshman Composition — 3 Hrs. Each

A course in the principles of effective writing. Special emphasis on punctuation, sentence structure, and functional grammar. Practice in the use of the library. Weekly themes and wide reading.

Social Science (Government 239) Survey of Government in the United States — 3

Functions, problems, and policies of national, state, and local governments in the United States. Course designed especially for the curriculums in business occupations and technology, and health careers.

Sociology (237) Social Principles & Institutions — 3

Prerequisite: Twenty semester hours or permission of the instructor. Introductory study of the culture concept, group behavior, and social organization.

Psychology (233) Psychology of Adjustment — 3

Prerequisite: Psychology 231 or consent of the instructor. A study of the dynamics of adjustment as applied to personality development and effective living.

Mathematics (131) College Algebra or
(031) Intermediate Algebra — 3

131 - Prerequisite: Two units of high-school algebra or one unit of high-school algebra and one unit of geometry, and a satisfactory score on pre-registration tests, or consent of chairman of the department. Functions and graphs,

131 continued

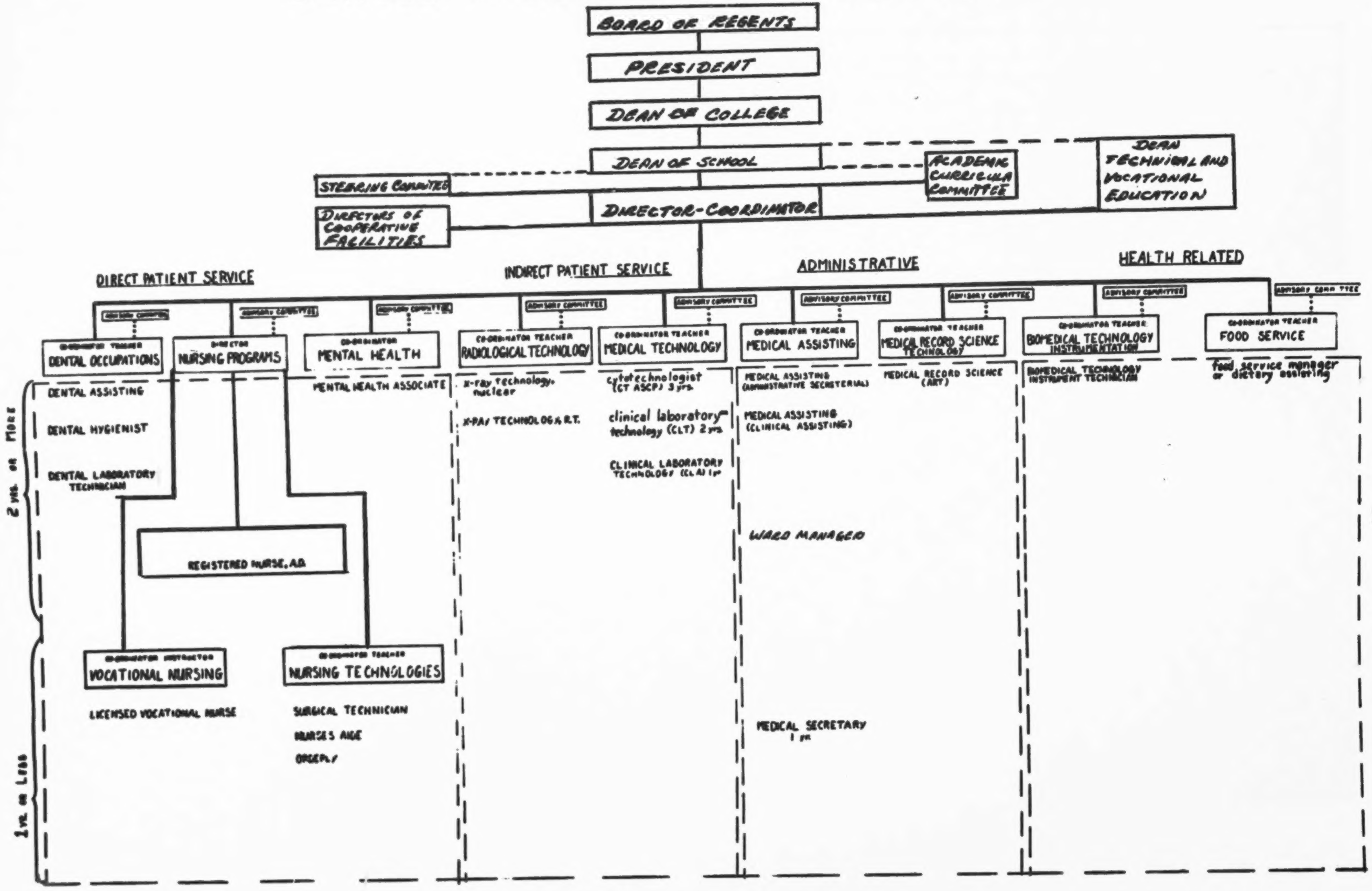
equations and systems of equations of first and second degree, exponents and redicals, ratio, proportion, and variation, theory of equations, inequalities, progressions, binomial theorem. Credit not allowed in both Mathematics 131 and Mathematics 135.

031 - A course for those who have had insufficient preparation for college algebra or who have been out of high school of several years and need a review of algebraic fundamentals. Minimum essentials of algebra.

Natural Science (Zoology 133, 134)
(Biological) Human Anatomy and Physiology 3 hrs.

Designed for liberal arts and pre-nursing students and for home economics majors. A study of all systems of the human body. Practical application emphasized. Fulfils the requirements for six hours of natural science. Two lectures and three hours of laboratory each week.

SCHOOL OF BIOMEDICAL ARTS AND SCIENCES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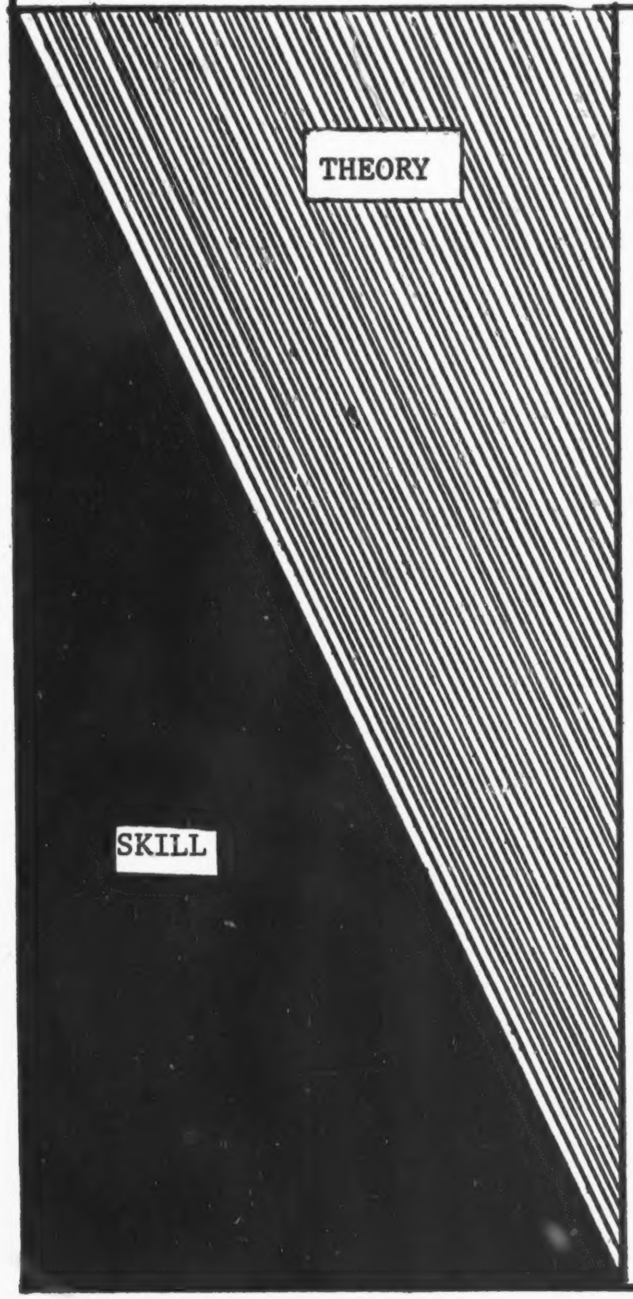
DIRECT PATIENT SERVICE
INDIRECT PATIENT SERVICE
ADMINISTRATIVE
HEALTH RELATED
ADVISORY COMMITTEE
COORDINATOR TEACHER
DENTAL OCCUPATIONS
DIRECTOR
NURSING PROGRAMS
COORDINATOR
MENTAL HEALTH
COORDINATOR TEACHER
RADIOLOGICAL TECHNOLOGY
COORDINATOR TEACHER
MEDICAL TECHNOLOGY
COORDINATOR TEACHER
MEDICAL ASSISTING
COORDINATOR TEACHER
MEDICAL RECORD SCIENCE TECHNOLOGY
COORDINATOR TEACHER
BIOMEDICAL TECHNOLOGY INSTRUMENTATION
COORDINATOR TEACHER
FOOD SERVICE
DENTAL ASSISTING
DENTAL HYGIENIST
DENTAL LABORATORY TECHNICIAN
MENTAL HEALTH ASSOCIATE
x-ray technology, nuclear
X-RAY TECHNOLOGY R.T.
cytotechnologist (CT ASCP) 3 yrs.
clinical laboratory technology (CLT) 2 yrs
CLINICAL LABORATORY TECHNOLOGY (CLA) 1 yr
MEDICAL ASSISTING (ADMINISTRATIVE SECRETERIAL)
MEDICAL ASSISTING (CLINICAL ASSISTING)
WARD MANAGER
MEDICAL SECRETARY 1 yr
MEDICAL RECORD SCIENCE (ART)
BIOMEDICAL TECHNOLOGY INSTRUMENT TECHNICIAN
food service manager or dietary assisting
REGISTERED NURSE, AD
COORDINATOR INSTRUCTOR
VOCATIONAL NURSING
COORDINATOR TEACHER
NURSING TECHNOLOGIES
LICENSED VOCATIONAL NURSE
SURGICAL TECHNICIAN
NURSES AIDE
ORDERLY
2 yrs. or More
1 yr. or Less

THEORY-SKILL SPECTRUM IN THE HEALTH FIELDS



RESEARCH SCIENTIST PHYSICIAN AND DENTIST PRACTITIONERS	PROFESSIONAL	B.A. TO DOCTORATE	4 YRS. OR MORE
PARAMEDICAL-PARADENTAL: R.N. (B.S.) Distician Pharmacist Medical Record Librarian Occupational Therapy Physiotherapist	SEMI-PROFESSIONAL OR TECHNOLOGIST	A.D. TO B.A. OR CERTIFICATE	2 OR 4 YEARS
TECHNICAL ASSISTANT: X-Ray Technician R.N. (A.D.N.) Medical Record Technician Dispensing Optician Occupational Therapy Assistant Inhalation Therapy Technician	TECHNICIAN	A.D. OR CERTIFICATE	2 YEARS
PRACTICAL ASSISTANT: Licensed Practical Nurse Psychiatric Aide AIDE: Orderly-Nurse Aide Dietary Aide Housekeeping Aide	ASSISTANT OR VOCATIONAL	CERTIFICATE	1 YEAR OR LESS

Robert E. Kinsinger, Education for Health Technicians - An Overview (American Association of Junior Colleges: Washington, D.C., 1965), p. 11 (ADAPTED)

SCHOOL ORGANIZATION - SCHOOL OF HEALTH OCCUPATIONS

A proposed organization of the School of Health Occupations is presented as developed from the investigation of the necessary curricula, faculty, and facilities for health occupational education to serve the general classification of health occupational performance. Unification and justification of objectives are stated in a proposed philosphy and purpose. Administrative design for conduct of instruction is placed within the framework and communication channels of Amarillo College. A committee method of liason is arranged for shared planning of instruction and review with health industry facilities of the community. This allows for the direction of those health occupational education programs which, in order for accreditation with the Council on Education of the American Medical Association, must necessarily be under a recognized health professional.

The organization according to the above brief statement of guidelines is illustrated loosely on the enclosed chart.

Advisory Committee

To be chaired by the professional in the community. The programs which appear to stand alone in the classifications will need further development under the direction of the Steering Committee for complete identification.

Program Director-This person may be directly responsible for one major program but exercise a supervisory and consultative capacity for a second or third program. In planning the nursing education, the director would perhaps be directly responsible for the A.D. Nursing Program, and supervisory for the less involved program for the education in the nursing arts such as the surgical technician, the nurses' aide, or the orderly.

Coordinator-Teacher -- Although a program for a group of occupations most likely would involve only one college-based teacher, this party also has the duties of coordinating the clincial facility schedules of the students and the teaching or supervision of the student by the technologist in the clinical facility.

On the chart the C.L.A. program is named as a one-year program, and so it is at present under the rules for examination and accreditation by the American Society of Clinical Pathologist. For the purpose of this report, the C.L.A. designation is the certifying examination to which the graduate of the two-year clinical technology program may be admitted. This certification and designation is under intense evaluation and change by the American Society of Clinical Patholgists at this time. A new designation, "Certified Laboratory Technician" (C.L.T.) is in development for the two-year trainee.

It will be noted on the chart that though food management for health institutions is included, no firm indication is made as to whether the School of Health Occupations would offer elective to a student trained in the food management program of the technical school. This would be most likely. This same designation is not indicated on this organization chart proposal for the biomedical engineering technician. This person most likely would have his basic program in the technology school division of Amarillo College, with completion of technology for health institutions in the School of Health Occupations.

The separation of proposed length of individual programs is not specifically delineated, but is a guide line for administrative purposes. The economy of student time to acquire performance capability for job entry is the determinant. Planning consideration places less demanding occupational education in the same advisory committee groupings.

The programs for occupations requiring continuous clock hour programmed instruction and training of 160 hours, or less, are designed to be conducted within the Trade and Industrial education program of the Texas Education Agency.

The opportunity will be arranged for the offering of programs or portions of program in envening classes on demand.

Reference to the chart adapted from a diagram of Kinsinger will suggest an approach to the general concept expressed in the planning of the framework and operation of the school.

For those programs of two-year duration, an A.D. of Applied Science shall be granted the student upon his successful completion. For those programs of lesser duration, a Certificate of Completion is planned with a statement of what skills he is expected to be able to perform.

PROGRAMS INVESTIGATED FOR IMMEDIATE IMPLEMENTATION

MEDICAL RECORD SCIENCE TECHNOLOGY

Introduction

Medical Record Technician training programs numbered approximately 20 in the United States in 1967. One-third of these were two-year junior college programs and the remaining were one-year hospital based programs. In the national survey conducted by the American Hospital Association in 1966, the shortage of medical record technicians was clearly urgent--29% shortage with a 54% shortage estimated by 1975. Local needs followed the same pattern with every Amarillo Area hospital administrator interviewed requesting trained medical record personnel. Many hospitals were struggling along with on-the-job trained persons who needed more supervision than the "Consulting record librarian" who came once a month. The Accredited Record Technician could conceivably, after completing the two-year course, head up the Medical Record Department of small hospitals and work as consultant to nursing homes and extended care facilities. Supervision by a Registered Record Librarian would be necessary, but this could be handled with relative ease on a consulting basis.

Job Description

In a large hospital, the medical record technician usually works as an assistant to the registered librarian. Depending on the size, the department may have one or several such assistants, each in charge of a particular area of operation. In small hospitals, it is possible for an experienced medical record technician to be the head of a department. She may even be entrusted with the responsibility of organizing and then directing such a department.

Duties and Skills

A representative list of job categories and short description of duties usually found in medical record departments of hospitals is as follows:

1. Admission (Processes daily admissions: checks files for previous admissions; obtains medical records for previous admissions; adds new information; assigns file number).

2. Master File (Alphabetical File: Files cards manually or with automatic equipment; answers the telephone; prepares information for doctors' offices, as requested).

3. Chart File Clerk (Numerical file: files and pulls charts for research and legal action and currently needed information.)

4. Discharge (rearranges the file upon discharge of the patient; prepares list of discharged patients. Collects information from various divisions for the record; handles "loose leaf file" for short term stays in hospital; pulls admission card, stamps discharge date on charts, cards, original copy of admitting and identification slips.)

5. Discharge Analysis Clerk (analyzes medical records of recently discharged patients for proper entries by authorized personnel. Records statistical date under hospital services. Compiles death register. Prepares records for post operative complications and infections. Checks records for proper record of diagnosis, signatures of consultants on case, notes the missing information to be supplied by the appropriate departments and physicians.)

6. Statistics (Compiles daily census; prepares monthly reports; prepares graphs, as indicated.)

7. Medical Record Clerk (checks deficiency slips for final completion by the attending physician and other doctors on case; has direct contact with physicians regarding the final information.)

8. Insurance Clerk (pulls charts, checks for authorization by insurance companies; prepares needed copies for attorneys; other secretarial duties as requested.)

9. Coding (Coding or verifies coding of diseases, operations and special therapy, according to the recognized nomenclature and classification systems; medical indexing, cross indexing of diseases and operations according to the system adopted by the particular hospital; processes research requests.)

10. Survey, Tumor Registry (processes tumor registry cases; prepares statistical information necessary for special reports such as information for the State Division of Health.)

11. Medical Transcriptionist (stenographic duties related to machine transcription to reproducible copy.)

Depending upon the size of the department, individual qualifications and experience, medical record technicians may perform any or all duties described above. Categories 5 through 10 are the areas she is most likely to work in although she must have skill and knowledge of the clerical and stenographic duties outlined above.

Licensing, Registry; Existing Requirements

The American Association of Medical Record Librarians in collaboration with the Council on Medical Education of the American Medical Association issued "Essentials of an Approved School for Medical Record Technicians" with requirements established for mandatory registration or certification following the completion of the prescribed course of study. At the present time, a student may satisfy the requirements by completing the two-year college training program in medical record technology or by a correspondence course for those already working in medical record departments. The examination for accredition is then taken by the student to establish his certification.

Employment Data

The Amarillo Area survey supported the need for medical record technicians. There were only five persons reported serving in this capacity in the entire area with urgent needs voiced by every hospital administrator interviewed. The semi-professional in this area of work does not require daily supervision, as do some of the other health technologists, hence, medical record technicians can serve hospitals with scheduled consultations by record librarians.

Cost:

A college laboratory of a simulated medical records department enables the students to have clinical experience on campus there by providing more space for more students. Clinical experience in the hospital is desirable but is prohibitive to training more than a limited number of students. Some hospital experience will be required in addition to the campus laboratory work.

Estimated costs for Amarillo College:

New Equipment for simulated medical record department (Laboratory)	$ 8,682.00
Full-time personnel (annual salary) (first year program)	10,000.00
Part-time personnel	600.00

Medical Record Science Technology

Supplies	77.00
Replacement & Repair of Equipment	100.00
Travel	800.00
TOTAL	$20,259.00[1]

Curriculum:

The curriculum prepared for Amarillo College Medical Record Science Technology was worked out by the Advisory Committee with representatives of Medical Record Departments of local hospitals and the Department of Business Administration of Amarillo College under the guidelines established by the Education and Registration Committee of the American Association of Medical Record Librarians. Approval of the tentative curriculum has been given by Miss Laura Anne Biglow, Chief of the above division of the A.A.M.L. As the current trend is to move towards computerization of hospital records, the necessary curriculum revisions should be made to include computer course work. The general education and supporting science course work is the same as that offered to students in the liberal arts division of Amarillo College.

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[1] List of Supplies and Equipment estimate on file in project office.

MEDICAL RECORD TECHNICIAN: TWO YEAR PROGRAM

FIRST YEAR

FALL SEMESTER	SEMESTER HOURS
English 131 (Freshman Compositon)	3
Zoology 133 (Human Anatomy & Physiology)	3
Medical Terminology	3
Sec. Administration 2310	3
Medical Record Science 133	3
Physical Education	1
	16

SPRING SEMESTER	
English 132 (Freshman Composition)	3
Zoology 134 (Human Anatomy & Physiology)	3
Medical Record Science 134	3
Medical Report Transcription	3
Medical Record Science Directed Practive	2
Physical Education	1
	15

SECOND YEAR

FALL SEMESTER	SEMESTER HOURS
Government 233 (Government of the U.S.)	3
Pyschology 233 (Psychology of personal and Social Adjustments)	3
Business Math 135 or Math 131 (College Algebra)	3
Medical Record Science 233	3
Medical Record Science Directed Practice	3
	15

SPRING SEMESTER	
Government 234 (Government of the U.S. and Texas)	3
Sociology 237 (Social Principles and institutions)	3
Legal Aspects of Medical Records	2
Medical Record Science 234	3
Elective	3
Directed Practice	4
	18

Suggested Electives: Data Processing 1333, Data Processing 1336, Speech 230, Psychology 234, Business Machines 124, Business 133, Accounting 231, Economics 237-38, Business Law, etc.

TOTAL NUMBER OF SEMESTER HOURS: 64

MEDICAL RECORD TECHNICIAN: COURSE DESCRIPTION

MEDICAL TERMINOLOGY: (1st semester -- 3 hours--1st year)

The purpose of this course is to build a medical vocabulary; develop skill in recognizing the meaning of medical words by analyzing their elements; relate the medical word to the corresponding anatomical site; spell and pronounce medical terms correctly; read medical reports with understanding.

MEDICAL REPORT TRANSCRIPTION: (1st year--2nd semester--3hours)

Development of ability to use transcribing equipment; recognize an acceptable format for typing of medical reports, with emphasis on correct spelling and punctuation of medical terms; use of acceptable abbreviations on medical reports; development of ability to care for transcribing equipment.

LEGAL ASPECTS OF MEDICAL RECORDS: (2nd semester--2nd year--3hours)

The objectives of this course are to assist the student to develop an awareness of the confidential nature of the medical record and the duty of all hospital personnel to protect this confidentially; of laws pertaining to medical records and the principles involved in release of medical information; develop skills in the preparation of reports, abstracts and summaries of recorded data; acquire an understanding of commonly used legal terminology, and develop an attitude consistent with professional ethics, and good public relations.

MEDICAL RECORD SCIENCE 133 and 134:

1st semester	1st year	3 hours
2nd semester	1st year	3 hours

This is the basic course in medical record keeping theory and practice, which includes background material on the history of medicine and hospitals with emphasis on the medical record department and the medical record profession. Included is a study of ethics, particularly as it pertains to the medical profession and the allied health field. Introduction to medical and vital statistics and their uses, together with methods of compilation from the medical record as source.

Laboratory includes introduction to a simulated medical record department, it organization and function.

MEDICAL RECORD SCIENCE 233 and 234:

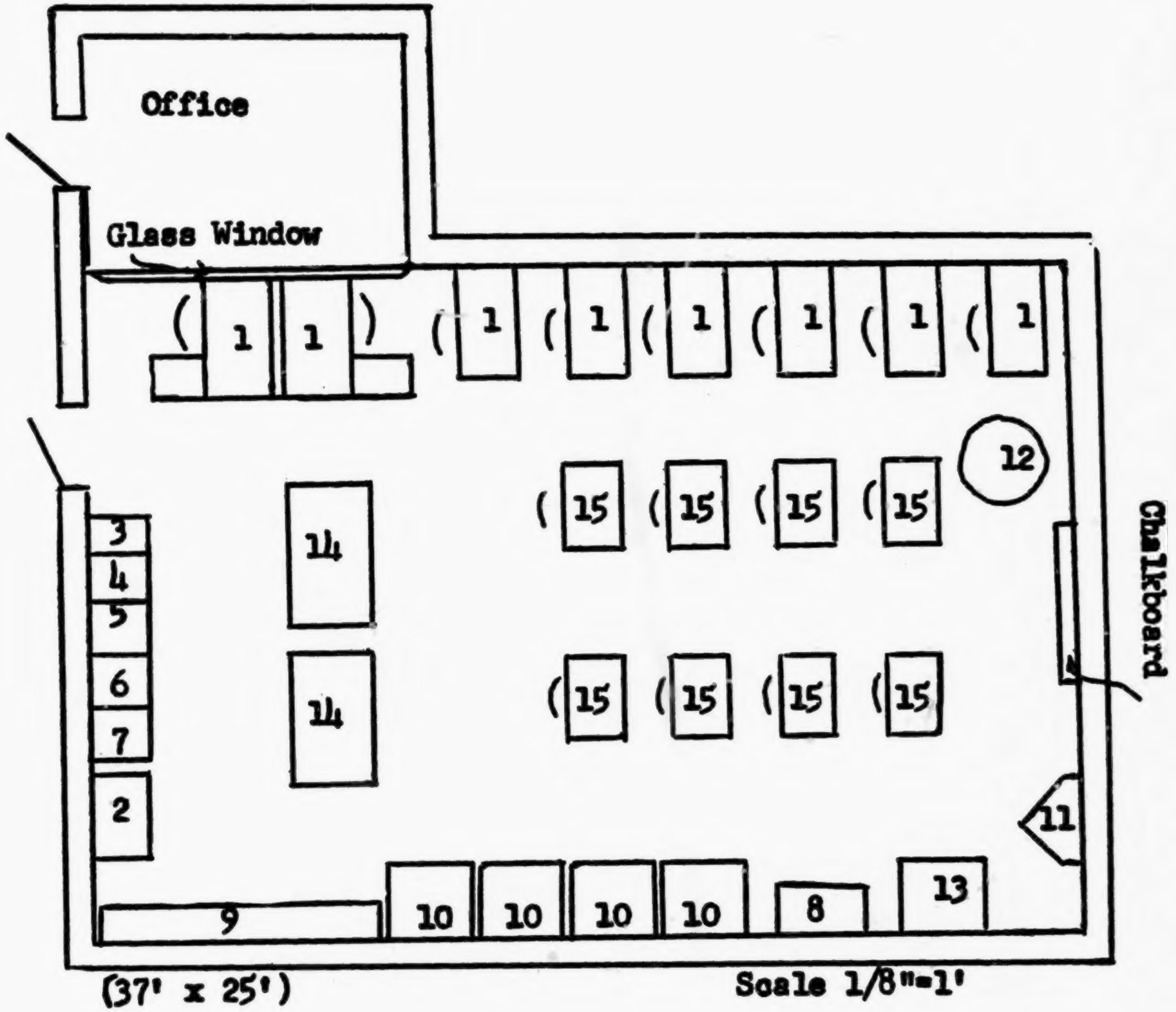
1st semester 2nd year 3 hours
2nd semester 2nd year 3 hours

The purpose of this course is essentially the same as that for Medical Record Science 133 and 134. It is a continuation with emphasis on coding and indexing procedures; automation of data processing as applied to hospital record data, storage and retrieval. Also included is an introduction to the basic principles of organization and management with special emphasis on the interdepartmental and departmental organization and management as applied to medical administration. Laboratory will include development of disease and operative indexes, projects for planning a medical record department, developing and improving procedures, and experience in developing departmental personnel policies and in solving departmental organizational and personnel problems.

DIRECTED PRACTICE I AND II (Total 9 credit hours)

The purpose of this course is to correlate theory of formal classroom work by actual application in medical record departments under the supervision of Registered Record Librarians and Accredited Record Technicians. (Directed Practice Required--540 hours--4 hours directed practice equals--1 credit hour.)

1. Transcription Machine
2. Calculator
3. Index (Operative or Dis.)
4. E.K.G. Registry
5. Heart Registry
6. Tumor Registry
7. Rolodex (Pat. Info.)
8. Patient Index File
9. Open Shelf Files
10. 5-Drawer Vertical Files (Pat. Med. Records & Corresp.)
11. Overhead Projector
12. Podium
13. Supply Cabinet
14. Chart Work Table
15. Student Desk


Office
Glass Window
Chalkboard
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
(37' x 25')
Scale 1/8"=1'

MEDICAL RECORD LABORATORY

Medical Record Science Technology

Medical Records Technology Advisory Committee:

Lorean Loper, R.R.L., Chairman, Medical Records Department, Northwest Texas Hospital, Amarillo, Texas

Wilma Risdon, R.R.L., Medical Records Department, Air Base Hospital, Amarillo, Texas

Sister Elizabeth, R.R.L., Medical Records Department, St. Anthony's Hospital, Amarillo, Texas (resigned Feb. 1, 1968)

Ailene McNew, A.R.T., St. Anthony's Hospital, Amarillo, Texas

Dewey W. Yeager, M.D., General Practice, Amarillo, Texas

Edena Cobb, Associate Professor of Business Administration, Amarillo College

Musa Coffee, R.R.L. (retired)

Informational Sources:

Laura A. Biglow, R.R.L., Chief, Education Program, American Association of Medical Record Librarians, 211 East Chicago Ave., Chicago, Illinois 60611

Mr. Ralph Kuhli, Director, Department of Allied Medical Professions and Services, Division of Medical Education, American Medical Education, 535 North Dearborn Street, Chicago, Illinois 60610

MEDICAL OFFICE ASSISTANT (ADMINISTRATIVE-CLINICAL)

Introduction

A survey of all known practicing physicians in the 57-county area revealed a decided need for trained auxiliary personnel, in particular, the medical office assistant. More than one-third of the 981 persons surveyed were classified as office-clerical. Increased needs in general office administration has accounted for the need for employees with special training in contrast to the days when a girl would go from high school into a physician's office and be trained on-the-job. In addition to the employment needs of physicians, hospital administration offices and medical record departments would employ persons trained in this type of program. Other employees might be governmental health agencies and insurance companies specializing in medical insurance. Trends among private practicing physicians from solo practice towards more and more group practice points to specialization among the auxiliary personnel with the Administrative Office Assistant in greater demand.

Job Description

The Administrative medical office assistant if employed by a physician acts as receptionist, secretary and bookkeeper, answers the telephone, greets and assists patients and other callers, makes appointments, handles correspondence, takes care of patients' accounts, keeps case histories of patients, and transcribes from a machine. Clinical duties, if trained, would include preparing patients for examination, sterilizing instruments and equipment, performing simple laboratory tests, and assisting physician in his examination of patients.

Employment in a medical record department would entail ability to review medical records for completeness and accuracy; file medical records; or prepare records for microfilming; type medical reports of operations, x-ray or laboratory examinations, or special treatments given to patients; compile statistic of many kinds; including the hospital's daily census information on reportable diseases for public health authorities and others; assist the medical staff by preparing special studies.

Licensing, Registry, Existing Requirements

The certifying board of the American Association of Medical Assistance, Inc. (AAMA) (510 North Dearborn Street, Chicago, Illinois 60610) gives an examination in two categories for the certification of Medical Assistants: (1) Certification as an Administrative Medical Assistant, and (2) Certification as a Clinical Medical Assistant.

The examination is taken on a voluntary basis. Through pilot programs, the AAMA is engaged in researching the minimum requirements for medical assistant training. When the program has become standardized according to the general regulations of the A.M.A. Council on Education, then registration or certification will become mandatory.

Employment Data

The survey of practicing physicians, 587 M.D.'s and 58 D.O.'s with a 64% response indicates a marked degree of interest in this type of training. Inadequately trained personnel was one of the major concerns of the respondents. Of those surveyed, 22% had salaries of less than $250 per month; 58% fell between $250 and $350 per month. Hospitals reported extreme shortages among transcriptionist and clerical workers in their medical record departments.

Costs

The Administrative Medical Office Assistant training will require no special new facilities beyond those already provided for in the Business Administration Department of the college. Clinical Medical Office Assistant training requires a laboratory setting, e.g. simulated physician's office.

Estimated Cost (Clinical Medical Office Assistant Laboratory)

Instructional Cost, first year		$ 8,600.00
Equipment		7,882.75
Supplies:		
Lab Supplies		406.99
Library		200.00
Teaching Supplies		150.00
	Total	$17,239.74

Curriculum

The curriculum prepared for Amarillo College Medical Office Assistant

(Administrative-Clinical) training program was worked out by the Advisory Committee with representatives of the medical profession, medical assistants' assocation and the Department of Business Administrations of Amarillo College. This curriculum follows closely the program designed by San Antonio Junior College, now under a pilot program approved by the American Association of Medical Assistants. It is the consensus of opinion that there will be more demand for the Administrative Medical Office Assistant training as solo practice is phased out and group practice becomes more prevalent among physicians. Federal legislation which requires third-party payments increases "paper work" in all medical offices, including hospitals, clinics, nursing homes, insurance firms, etc. The trends point to more and more of the clinical function in offices to be assumed by technically or vocationally trained nurses, e.g., the A.D. Nurse of the Licensed Vocational Nurse. It is recommended that the clinical training incorporated in this program be evaluated periodically for need in the commumity.

Informational Sources

Mrs. Mildred R. Crawford, President Elect. American Association of Medical Assistants, Inc., 6701 Blanco Road, Apt. 805, San Antonio, Texas 78216

Miss Jo Estrada, Texas Medical Assistants Association, 612 Medical Professional Building, San Antonio, Texas 78212

Mrs. Dene R. Murray, Executive Director, American Association of Medical Assistants, 510 North Dearborn Street, Chicago, Illinois 60616

Department of Health, Education and Welfare, Bureau of Adult, Vocational, and Library Programs, "Suggested Guidelines for Developing a Program For Training Medical Assistants," April 1, 1963.

MEDICAL OFFICE ASSISTANT CURRICULUM (ADMINISTRATIVE-CLINICAL)

ONE YEAR PROGRAM

FALL SEMESTER

	SEMESTER HOURS
English 131 (Freshman Composition)	3
Zoology 133 (Anatomy & Physiology)	3
Medical Terminology	3
*Medical Office Assisting, Clinical Procedures I	2
*Sec. Adm. 121 (Beginning Typing) or 122 (Intermediate Typing)	3
Sec. Adm. 131(Beginning Shorthand) or 132(Intermediate Shorthand)	3
Sec. Adm. 2310 (Office Management and Procedures)	3
	17 or 18

*Student Option--Medical Office Assisting, or Sec. Adm. 131

SPRING SEMESTER

English 132 (Freshman Composition)	3
Zoology 134 (Anatomy & Physiology)	3
Business 135 (Business Math)	3
Typewriting and Machine Transcription	3
*Medical Shorthand and Transcription or Elective	3
Business 124 (Business Machines)	2
*Medical Office Assisting, Clinical Procedures II	2
	19

*Student Option

SUMMER SESSION

Legal Aspects of Medical Records	2
Medical Office Assisting, Applied	5
	7

TOTAL NUMBER OF SEMESTER HOURS: 46 (for one year program)

TWO YEAR PROGRAM

(Second year added to above)

FALL SEMESTER

Bookkeeping 131 or Accounting 231	3
Business 2318 (Principles of Management)	3
*Sec. Adm. 2311(Advanced Shorthand and Transcription)or Elective	3
Advanced Typing and Machine Transcription	3
Business 2313 (Business Communications)	3
*Medical Office Assisting, Clinical Practice II	3
	18

*Student Option

SPRING SEMESTER

Government 239 Survey of the U.S.	3
Psychology 233 (Psychology of adjustments)	3
Sociology 237 (Social Principles and Institutions)	3
Machine Transcription	2
	11

TOTAL NUMBER OF SEMESTER HOURS: 75 (for two year program)

MEDICAL OFFICE ASSISTANT: COURSE DESCRIPTION

*MEDICAL TERMINOLOGY:

The purpose of this course is to build a medical vocabulary; develop skill in recognizing the meaning of medical words by analyzing their elements; relate the medical word to the corresponding anatomical site; spell and pronounce medical terms correctly; read medical reports with understanding.

*LEGAL ASPECTS OF MEDICAL RECORDS:

The objectives of this course are to assist the student to develop an awareness of the confidential nature of the medical record and the duty of all hospital personnel to protect this confidentially; of laws pertaining to medical records and the principles involved in release of medical information; develop skills in the preparation of reports, abstracts and summaries of recorded data; acquire an understanding of commonly used legal terminology, and develop an attitude consistent with professional ethics, and good public relations.

MEDICAL OFFICE ASSISTING, CLINICAL PROCEDURES I:

Examining room techniques, preparation of the patient, vital signs, sterilization techniques, supplies, dressings and minor surgery, nutrition. Three hours per week, lecture, demonstration, and performance.

MEDICAL OFFICE ASSISTING, CLINICAL PROCEDURES II:

Medication, principles, and procedures, drugs and their administration, injections procedures and administration. Emergency and first aid. Three hours per week--lecture, demonstration, and performance.

MEDICAL OFFICE ASSISTING, APPLIED:

Placement in physicians' offices and clinical situations two hours per week for directed practice and one hour per week seminar in problem solving.

SPECIALTY ASSISTING:

Problems and Procedures for the specialities, surgeon, pediatrician, proctologist, obstetrician and gynecologist, neurophyschiatrist, otolaryngologists, ophthamologist, orthopedist.

MACHINE TRANSCRIPTION:

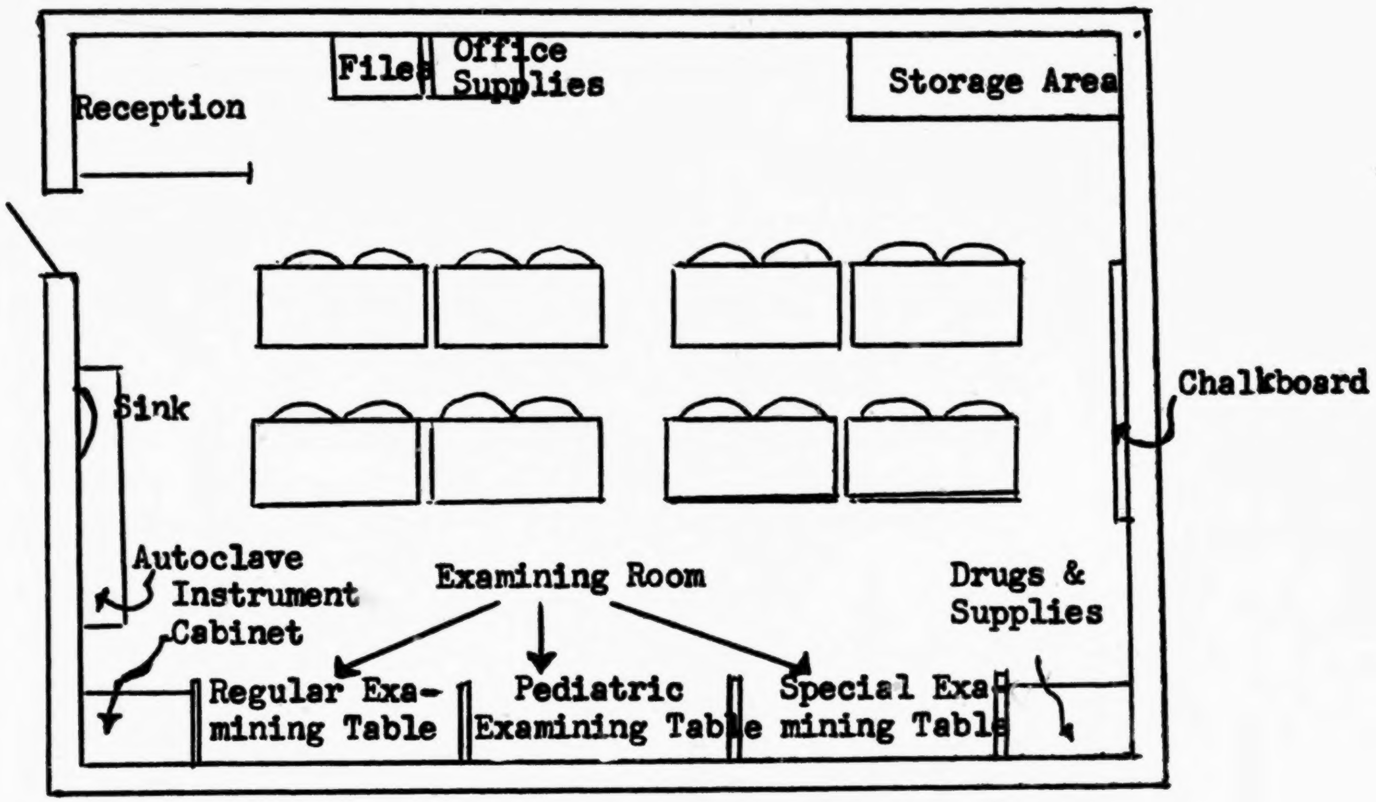
The student develops skills in using the types of transcribing machines customarily employed in recording dictation of medical records and correspondence as would be found in professional offices, hospitals and clinics.

MEDICAL SHORTHAND AND TRANSCRIPTION:

This course is designed for students who are preparing to work in professional offices, hospitals and institutions requiring medical dictation. Emphasis is on production of mailable copy.

*Same Courses offered in Medical Record Technology.

Advisory Committee	Employer
Edena B. Cobb, Chairman	Associate Professor, Amarillo College Department of Business Administration
Louis R. DeVanney, M.D.	Urologist
Ella Balckbum, Medical Office Assistant	Louis R. DeVanney, M.D.
Donnie Hutchinson, Medical Office Assistant	Edwin Mears, M.D.
Theresa Scott, Medical Office Assistant	Drs. Cooper, Garrett, Glen, and Hutchinson


Files
Office Supplies
Storage Area
Reception
Sink
Chalkboard
Autoclave
Instrument Cabinet
Examining Room
Drugs & Supplies
Regular Examining Table
Pediatric Examining Table
Special Examining Table

(37' x 25')

Scale 1/8"=1'

MEDICAL ASSISTANT LABORATORY

DENTAL ASSISTANT

Introduction

In a survey conducted by the Panhandle District Dental Scoiety for the 32-county Panhandle area, a shortage of dental auxiliary personnel was confirmed. Of the 296 Dental Assistants now in dental offices, only 25 are certified. The pattern of on-the-job training prevails with less job efficiency and lower salaries than that expected of trained personnel. Demands for dental care are increasing with the prospect of dental insurance being expanded to public health services for even greater demand on the individual dentist's time. Experimental studies have found that a dentist working with one assistant in a two-chair office can treat twice as many patients as a dentist who works alone, and that he can do so without any extension of his professional day, and without sacrifice in quality of service.

Job Description

The dental assistant's primary function is to assist the dentist at chairside, although she continues to perform many assignments in the laboratory and office.

In the dental operatory, the assistant's role is similar to that of a surgical nurse in the operating room. The assistant places instruments in the order in which they are to be used, keeps the operating field clear during treatment, prepares restorative materials and dental cements, and passes materials and instruments to the dentist. She may also assist in making radiographs.

In the laboratory, the dental assistant makes models of the teeth and mouth, casts inlays and crowns, and performs other sub-professional tasks once done by the dentist. She may process exposed X-ray film and mount the finished radiographs.

As office manager and receptionist, the assistant may receive patients, arrange appointments, record treatment, keep accounts, send out statements, keep an inventory of materials used, and other supplies. Where a full-time secreatry is employed, however, the assistant performs many of these duties only in the absence of the secretary.

Licensing, Registry, Existing Requirements

The Council on Dental Education of the American Dental Assoication endorses the certifying examination given by the American Dental Assistants Association upon completion of the required formal training and after accumulating a stated amount of practical experience as an employed assistant. At the present time, there is no licensure by State Boards of Dental Examiners for the Dental Assistant.

Employment Data:

According to the survey conducted in the Texas Panhandle, there is a 25% turnover among the employed dental assistant per year--some of these are reportedly leaving the field of work because salary ranges are relatively low compared to other types of employment with commensurate job responsibility. Salaries ranged from $185 to $225 per month for persons entering the jobs without prior training.

Respondents voiced concern over the lack of a training program in the area. Salaries commensurate with training will be offered when trained workers become available, according to the survey.

Costs:

The Dental Assistant Training program will require two operatories, a laboratory, x-ray room, darkroom, classroom which would supply office and reception room facilities as related to a dental office. This basic equipment would provide a facility designed to accommodate 16 students per class and could be extended to accommodate a second class of 16 students.

Estimated Costs:

Instructional cost, first year	$10,000.00
Supplies	5,373.81
Replacement and Repair of Equipment	100.00
Travel (Accrediting Boards)	800.00
New Equipment	40,833.20
TOTAL	$57,107.01

CURRICULUM:

The Council on Education of the American Dental Association recognizes both one year and two year dental assisting curriculums, (one year programs are considered minimum). According to the Council, the two year junior college associate in applied science degree offers certain educational advantages to students and to the profession. The two year program is looked upon with favor by the Council.

The two year curriculum, worked out by the Advisory Committee on Dental Assisting was not approved by the Texas Education Agency because it "appeared too pre-dental," therefore the Advisory Committee along with consultants for Health Occupations for the Texas Education Agency revised the original curriculum to a twelve-month offering--two semesters plus a summer session with general education limited to 6 hours of college English. It was the recommendation of the Advisory Committee that students should be encouraged and supported to continue their general education course work after completion of the technical training to be eligible for the associate in applied science degree offered by the community college.

As with many of the technical training programs, the student who might be attracted to dental assisting is looking for "job entry" at the first possible moment--often with young women, two years is too long to spend in training to attain a position in the labor market comparable in salary and working conditions with one year training programs or on-the-job training.

The students who find dental assisting satisfying as an occupation should be counseled into continuing their education for completion of the applied science degree.

CURRICULUM OUTLINE FOR DENTAL ASSISTANT - One Year

FALL SEMESTER	SEMESTER HOURS
English 131 (Freshman Composition)	3
Fundamentals of Dental Assisting (Typing if needed)*	3
Ethics	1
Dental Anatomy and Physiology	3
Oral Pathology	3
	13

*At least one year of high school typing is required or one semester of typing may be taken in college.

SPRING SEMESTER	
English 132 (Freshman Composition)	3
Dental Materials and Laboratory Techniques	3
Dental Assisting: Clinical Experience I	3
Dental Roentgenology	3
Sec. Adm. 2310--Office Management and Procedures	3
	15

SUMMER SESSION	
Specialized Dental Assisting (Orientation)	3
Dental Assisting: Clinical Experience II and Lab Techniques	6
	9

TOTAL SEMESTER HOURS: 37

DENTAL ASSISTING: COURSE DESCRIPTION

FUNDAMENTALS OF DENTAL ASSISTING: 3 hours (2 hours lecture-8hours lab)

Three semester hours. An introduction to the functions of the dental assistant in providing dental health care. A review of the requirements and qualities necessary for success in this field, personal appearance, conduct and attitudes, professional and patient relations, philosophies. A survey of the function of the assistant in care of the office, ethics, and medical and dental specialities. An introduction to telephone procedures, planning of appointments, and office practices and relations.

DENTAL ANATOMY AND PHYSIOLOGY: 3 Hours (2 hours lecture-4 hours lab)

Three semester hours. A study of the anatomy of the head and neck, histology, physiology, and occlusion with special emphasis on the individual teeth and surrounding tissues. Morphology of the teeth will be stressed by wax carvings of individual teeth. The importance of diet and nutrition in tooth care will be stressed.

DENTAL MATERIALS AND LABORATORY TECHNIQUES: 3 hours(2 hours lecture-4 hours lab)

Three semester hours. An introduction to the dental laboratory to include the study of the techniques, materials, and equipment. Acids, waxes, plaster, abrasives and polishing agents, separating materials, impression materials, laboratory tools and equipment will be used to develop basic skills and dexterity. Ability to pour casts, models or dies for prosthetics, operative and other study modes. Casting procedures and investing procedures for prosthesis will be considered.

DENTAL ROENTGENOLOGY: 3 hours (2 hours lecture-4 hours lab)

Instruction in the basic principles of roentgenographic technics; anatomical landmarks, dental anatomy pertaining to dental roentgenography; arrangements and care of darkroom equipment and solutions, and proper processing.

DENTAL ASSISTING: CLINICAL EXPERIENCE I: 3 hours(1 hr.. lecture - 8 hrs. lab)

Supervised experience in the operatory and in the office of the dentist with scheduled rotation working with qualified dental assistants.

DENTAL ASSISTING: CLINICAL EXPERIENCE II: 3 hours(1 hours lecture--
8 hours lab)

Extension of Clinical Practice I with supervised experiences with the dentist. Extended experience in the office dental laboratory.

SPECIALIZED DENTAL ASSISTING: 3 hours (2 hours lecture-4 hours lab)

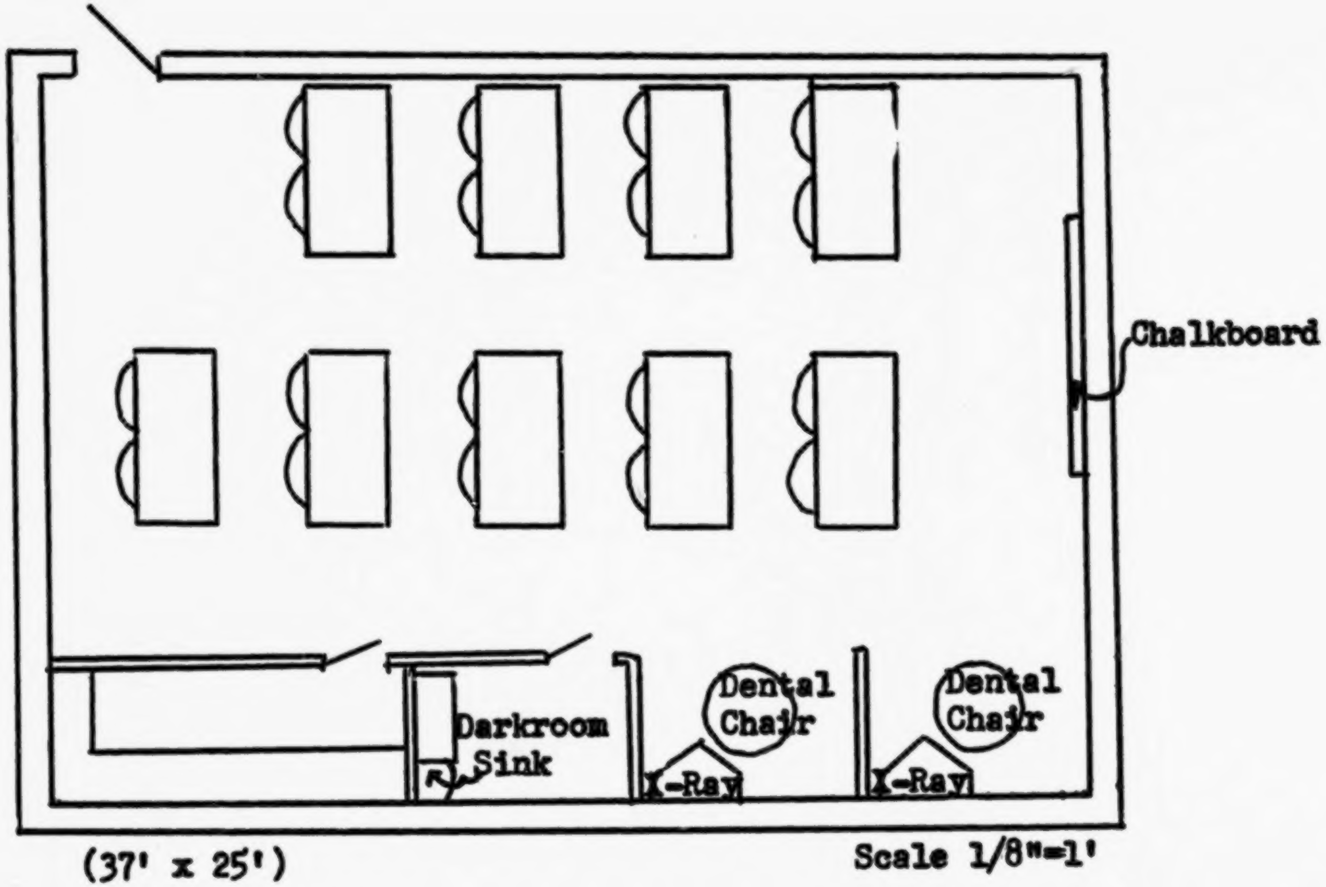
Introduction to dental assisting as it relates to the specialities in dentistry; orthodontics, pedodontics, and oral surgery. Survey of the role of the dental assistant in endodontics and public health dentistry.

Ethics: 1 hour

A study of the code of ethics in dental practice management and office relationships and the code of conduct and legal responsibilities of the dental profession.

ORAL PATHOLOGY: 3 hours (2 hours lecture-4 hours laboratory)

A study of the diseases of the oral cavity and those which have clinical signs and symptoms in the areas of the stomatognathic system. Causitive agents and organism of oral disease, methods of treatment, means to control the diseases, methods used for sterilization, and cleanliness of the dental treatment rooms and sterile operating room techniques.


Chalkboard
Dental Chair
Dental Chair
X-Ray
X-Ray
Darkroom
Sink
(37' x 25')
Scale 1/8"=1'

DENTAL ASSISTANT

INFORMATIONAL SOURCES:

American Dental Association, Council on Dental Education, "Policies and Guidelines for the Training of Dental Auxiliaries"., August, 1966.

Beckham, Thomas W., Director of Education, American Dental Assistants Associaton, 211 East Chicago Ave., Chicago, Illinois 60611

Matkin, R. L., D.M.D., Assistant Secretary, Council on Dental Education, American Dental Association, 211 East Chicago Ave., Chicago, Ill. 60611

U. S. Department of Health, Education and Welfare, "Organizing a Dental Assistant Training Program." OE-84030.

ADVISORY COMMITTEE:

Jack Fong, D.D.S., Chairman

William Richey, D.D.S

Aubrey Smith, D.D.S.

Wes Makeig, D.D.S.

Colonel Warren Hester, D.D.S.

Barbara Daly, Dental Assistant

Irene Clemmons, Dental Assistant

RADIOLOGIC TECHNOLOGY

Introduction

Traditional training for radiologic technologists has been in hospital-based schools; however, these schools are not able to graduate enough students to fill the needs. In addition to the very small number of graduates, directors of the hospital programs are facing severe problems in recruitment of teachers and providing broad educational experience for their students. Recognition of the need for joint training between hospitals and junior colleges has been expressed by the American College of Radiology and by the American Society of Radiologic Technologists to provide the student with a more comprehensive program and the opportunity to seek advanced degrees. A survey in November, 1967, of the fifty-seven county area surrounding Amarillo revealed that only 80% of the budgeted positions for radiologic technologists were filled. An increase of about 150% of the present staff was projected for 1970.

Job Description

The Radiologic Technologist works under the Radiologist with a minimum of supervision. He may work in the hospital laboratory, in surgery, or man a mobile unit for diagnostic tests of patients who are not able to leave their hospital room.

Specific tasks carried out by a technologist in a hospital laboratory are as follows: (1) Enters the patient in a daily log and assigns a file number, (2) Sets up technical exposure factors, (3) Positions patient to properly demonstrate area of clinical interest, (4) Exposes the film, (5) Processes the film, and (6) Performs office duties and report writing appropriate to the department.

Licensing, Registry, Existing Requirements

The American Registry of Radiologic Technologists examines students by a registry examination after completion of a minimum two-year program approved by the American College of Radiology's Committee on Technologists' training. Registration is not mandatory at the present time. Texas does not have a state licensure for Radiologic Technologists.

Employment Data

Shortages in the area are not filled by the training programs already established in hospitals in the Panhandle. In a survey of hospital training programs within a wide radius of Amarillo, it was learned that only 16 students will graduate this year and these students will likely be absorbed by their training hospitals. The nearest hospital with training programs, in addition to St. Anthony's Hospital in Amarillo are Plainview General Hospital, Plainview, Texas; Lubbock Methodist Hospital, Lubbock, Texas; and Bethania Hospital and Wichita General Hospital, Whichta Falls, Texas.

Salaries begin at about $400 per month with the greatest number surveyed falling within the $400-$450 range.

Radiologic Technology

Costs

A college laboratory, installed with the essential teaching equipment, would enable students to acquire those learning experiences normally found only in a hospital radiology department. A combination of campus laboratory training and hospital clinical experience will provide training space for more students than can be accommodated in hospital clinical facilities, thereby increasing the output of trained Radiologic Technologists.

Estimated costs for Amarillo College:

Instructional Costs	$10,600.00
Supplies	1,501.00
New Equipment	25,021.00
Replacement and Repair of Equipment	100.00
Travel (Accrediting Boards)	800.00
	$38,022.00

Curriculum

The Advisory Committee, following guidelines established by the Council on Education of the American Medical Scoeity, worked out a curriculum including general education courses and clinical experience in addition to the technical course work required for the radiologic technologist. This curriculum will be offered in a 24 month program; however, on the advice of the American College of Radiology, the program will be extended to at least 27 months. Revision of the tentative curriculum should be on-going as changes are brought about in the joint efforts of the American College of Radiology, the American Colleges to establish a new blend of technical training, general education, and clinical experience.

X-RAY TECHNOLOGY CURRICULUM

FIRST YEAR

FALL SEMESTER

	SEMESTER HOURS
Zoology 133 (Human Anatomy & Physiology)	3
Radiologic Technology 1361	3
X-Ray Physics 1363	3
Medical Terminology 1367	3
Clinical Application (295 hours) 1365	3
	15

SPRING SEMESTER

Zoology 134 (Human Anatomy & Physiology)	3
Radiologic Technology 1362	3
X-Ray Physics 1364	3
Medical X-Ray Protection 1268	2
Clinical Application (291 hours) 1366	3
	14

SUMMER SESSION

Radiologic Technology 1370	3
Clinical Application (385 hours) 1266	2
	5

SECOND YEAR

FALL SEMESTER

Radiologic Technology 2361	3
English 131	3
Clinical Application (295 hours) 2465	3
Government 233	3
	12

SPRING SEMESTER

Radiologic Technology 2362	3
English 132	3
Clinical Application (291 hours) 2466	3
Government 234	3
	12

SUMMER SESSION

Psychology 233	3
Clinical Application (385 hours) 2266	2
	5

TOTAL NUMBER OF SEMESTER HOURS: 63

Plus Additional three (3) months of Clinical Application to meet the minimum 2400 Hours requirement.

COURSES IN RADIOLOGIC TECHNOLOGY

X-Ray 1361-1362: (Darkroom Chemistry & Technique, Radiographic Positioning, and Topographic Anatomy.) During the first semester the student will be introduced to routine roentgenographic positioning and darkroom procedure involved in the production of a roentgenogram.

The second semester will be devoted to advanced roentgenographic positioning and topographic anatomy essential in roentgenography.

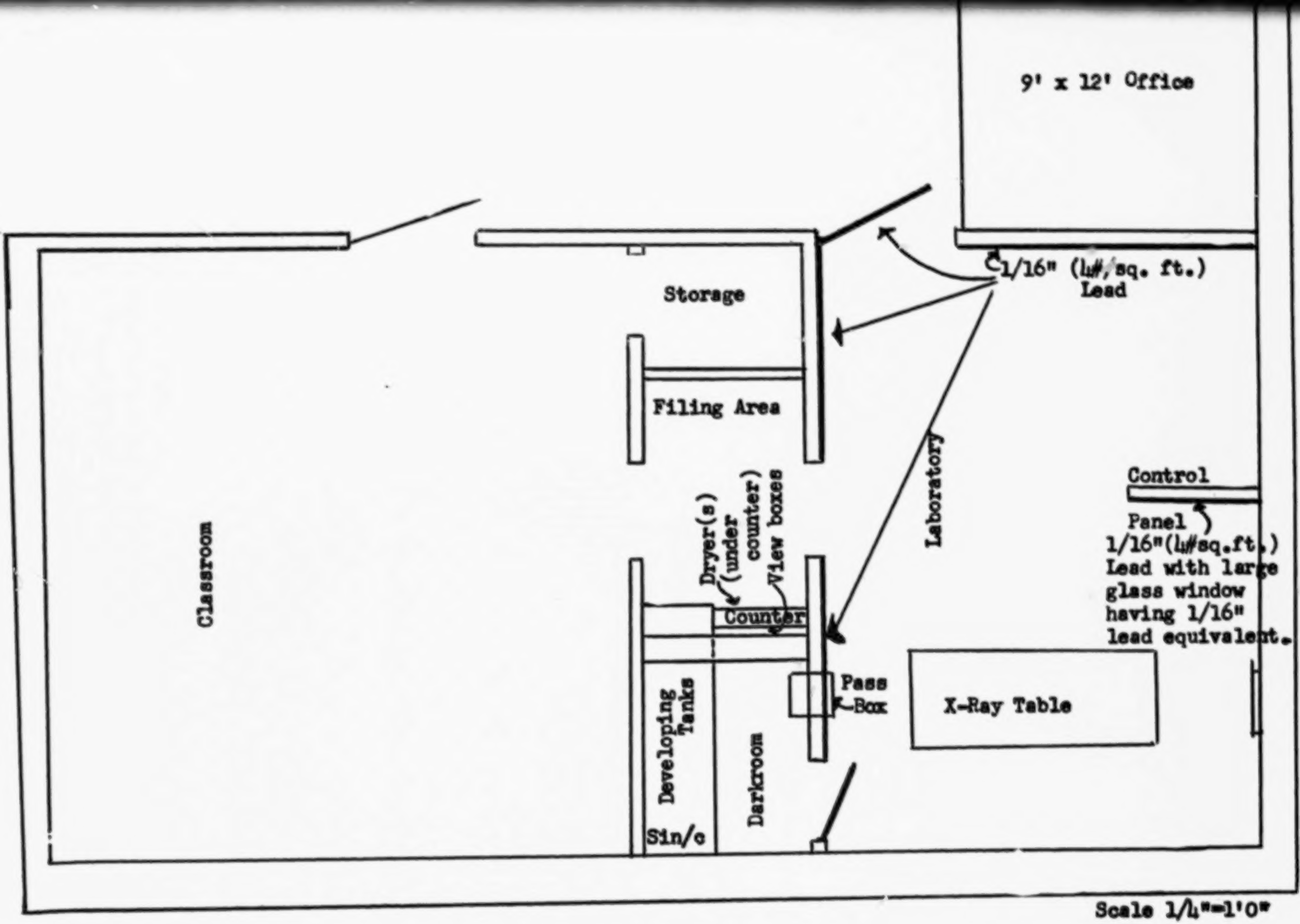
X-Ray 1363-1364: (X-Ray Physics and Equipment Maintenance) The first semester will be devoted to basic study in mechanics, magnetism, and electricity. The second semester will include intensive study of electromagnetism, electric transformers, electrical rectification, production of x-rays and preventive maintenance of x-ray machines.

X-Ray 1268: (Medical X-Ray Protection and Pediatirc Radiography) The first half will be devoted to study the potential hazards associated with the use of x-radiation. Emphasis will be placed on the protective measures and safe techniques which can be applied to minimize unnecessary exposure to patients and personnel. The second half will be directed toward essentials in pediatric radiography. This will include positioning and protection techniques.

X-Ray 1370: (Radiation Therapy and Intraoral Radiography) The first half of this course will be directed toward the study of the effects of radiation on the body tissues. The student will be introduced to the application of x-and nuclear radiation in treatment of malignancies. During the second half the anatomy and contours of the teeth and mouth will be studied with demonstrations in positioning necessary to produce diagnostic dental roentgenograms.

X-Ray 2361-2362: (Principles of Radiographic Exposure, Special Radiographic Procedures, and Common Radiographic Procedures Using Contrast Media.) The first semester will be devoted to a study of the relationship between miliampere, kilovoltage, time and distance with density contrast on a roentgenogram. The second semester will include a study in the use of contrast media to demonstrate the various radiolucent anatomical structures and organs.

Clinical Application - X-Ray 1365, 1366, 1266, 2465, 2466, and 2266. This course is designed primarily for practical application of the basic principles in radiologic technology for practical application of the basic principles in radiologic technology for practical application of the basic principles in radiologic technology by the student technologist. However, during the initial two weeks of 1365 and 1366, lectures in Orientation & Elementary Radiation Protection, Departmental Administration, and Nursing Procedures Pertinent to Radiology, will be scheduled.


9' x 12' Office
1/16" (4#/sq. ft.) Lead
Storage
Filing Area
Laboratory
Control
Panel
1/16"(4#sq.ft.) Lead with large glass window having 1/16" lead equivalent.
Classroom
Dryer(s) (under counter)
View boxes
Counter
Pass Box
X-Ray Table
Developing Tanks
Darkroom
Sin/c

Scale 1/4"=1'0"

X-RAY LABORATORY

SCHOOL OF BIOMEDICAL ARTS & SCIENCES

AMARILLO COLLEGE

Radiologic Technolgoy

Informational Sources

McGowan, R. T., Executive Director, The American Registry of Radiologic Technologists, 2600 Wayszta Boulevard, Minneapolis, Minn. 55405

Soule, Dr. A. Bradley, Chairman, Committee on Technologist Training, American College of Radiology, 20 North Wacker Drive, Chicago, Illinois 60606

Advisory Committee

William Dunnagan, M. D., Radiologist, St. Anthony's Hospital, Amarillo, Texas.

Bill Crawford, R. T., St. Anthony's Hospital, Amarillo, Texas

Gary Rutz, R. T., High Plains Baptist Hospital, Amarillo, Texas

W. D. Yeary, R. T., Northwest Texas Hospital, Amarillo, Texas

Sister Francesca, R. T., B.S., St. Anthony's Hospital, Amarillo Texas

Wilbur H. Team, Associate Professor of Physics, Amarillo College, Amarillo, Texas

MEDICAL LABORATORY TRAINING PROGRAM

Introduction

Recent survey of the positions in the clinical pathological laboratories of the area, both hospital and private, demonstrated a lack of a sufficient number of personnel in all categories from the formally recognized Clinical Laboratory Assistant to the Medical Technologist (American Society of Clinical Pathologists). These positions were often occupied by persons of other registries than those of the American Society of Clinical Pathologist and with persons trained "on-the-job." The commonly expressed need was for the adequately educated and trained person between the assistant and the professional Medical Technology (American Society of Clinical Pathologist) level. This person could be the logical product of a community college medical laboratory technician program.

Job Description

In addition to the performance with instant recall routine tests in urology and other departments of the medical laboratory under supervision of the physician of the M. T., A.S.C.P., he must perform them with fundamental understanding. Hematology: to operate and maintain Coulter Counter as well as hand chamber blood counts. To set up hemoglobin curves, to run quality control of blood counts and hemoglobins. To do prothrombin times. Prepare and adjust Wright stain for peripheral blood and Bone Marrow.

Medical Laboratory Training

In Blood Banking: Under supervision to do typing and crossmatching of blood. To maintain proper records of the blood. To keep surveillance of temperature records of blood bank refrigerator.

In Microbiology: The preparation of media. The culturing and routine identification of bacteria. The use of texts and references to aid in identification. Preparation of material for parasitology.

In Chemistry: The monitoring of the Autoanalyzer and the basic maintenance of the machine. The performance of the more routine chemistries on an individual basis. Solution preparation.

In Serology: The performance of VDRL and other percipitate test.

Licensing, Registry, Existing Requirements

In the state of Texas, there is no licensing of the medical technologist. The only registries under medical auspices in Medical Technology are the Board of Registry of Medical Technologist of the American Society of Clinical Pathologists for the vocational and technical worker in pathological laboratories. These Boards are established and maintained to insure the requirements for qualification by the Council on Medical Education of the American Medical Association, and the American Soceity of Clinical Pathologists. Other registries not under medical auspices are the American Medical Technologists, (M. T. or A. M. T.), International Registry of Independent Medical Technologists, (I. M. T.), and the International Society of Clinical Laboratory Technologists, (R.M.T.). The Board of Schools of Medical Technology of the A.S.C.P. is the only accreditation recognized by the National Commission on Accrediting, of schools educating and developing Medical Technology and pre-medical technology curricula. The M.T., (A.S.C.P.) is 90 semester hours with 12 months Hospital based school of Medical Technology program. The C.L.A. (A.S.C.P.) is a 12 month hospital based program for the vocational and technician in the Clinical Laboratory.

There is no accreditation for the proposed Medical Laboratory Technician as described here. This worker's job as described scope is either performed by the M.T. (A.S.C.P.) or the C.L.A., (A.S.C.P.). The latter has had insufficient education and training. The former is called upon to do routine work which must be performed, but prevents his utilization in the capacity for which he is prepared. This middle worker's job is also filled at present by graduates of the schools which have come from the other registries as described and persons trained on the job. The occupation described has been under consideration by clinical pathologists for quite sometime. In the fall of 1968, the American Society of Clinical Pathologists is scheduled to formally recognize and make plans for the accreditation as well as more specific requirements for this worker's qualification. Information and studies from community colleges and medical communities with programs such as these will be utilized, recognized and advised in the planning determing of guidelines. The graduates of these programs, it is contemplated, will have a certification and registry within two years. Until this certification ("M. L. T.") is established, graduates are to be certified with the C. L. A. (in order to receive an "entry" certification) and their recognized A. D. Degree with the opportunity to apply for the new certification without examination.

Employment Data

Placement in the hospitals of Amarillo and the Amarillo Referral Area to supply the present 18% unfilled vacancy and to serve the 10 to 20% turnover replacement. Entering salaries contemplated for the "M. L. T." would be commensurate between the $350.00 beginning for the C. L. A., (A. S. C. P.) and on-the-job trainee and the $550.00 for the entering M. T. Outside metropolitan Amarillo the salaries are 10 to 20% higher.

Cost

The Medical Laboratory Technician program will require one laboratory on the campus (one of the present chemistry laboratories may be utilized) equipped with the necessary microscopes and special instruments and equipment for the technology. This would provide for a student capacity of 15 students per class and extended for the 2nd class of equal number of students.

Medical Laboratory Training

Costs continued

Equipment	$11,491.80	
Supplies:		
Lab Supplies	1,424.58	
Library	184.70	
Teaching	150.00	(1,759.28)
Instruction		
Teacher-Coordinator	10,000.00	
Consulting Director	600.00	(10,600.00)
Total Cost	$23,851.08	

Curriculum

The two-year curriculum presented to the Texas Education Agency was disapproved with the statement that the only registry available was the C.L.A. However, the proposed M.L.T. curriculum is looked upon with favor by clinical pathologists who have been involved with medical technology education. The curriculum as outlined is designed to provide the student with the necessary general and supportive education as well as training in the skills demanding instant recall in that he may utilize judgement and decision and serve in the middle or semi-professional capacity in the medical laboratory. It also provides a basis for the student to become professional if he desires and opportunity presents itself. Counseling as to other choices such as are recognized by the ASCP of the student to that objective should be encouraged. This curriculum should also prevent the loss to the medical technology professions many candidates (44% loss during the college years for Pre-Medical Technologist (ASCP).[1]

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[1] "Laboratory Manpower Need Outruns Supply," Robert W. Cook, M.D. and Dallas Johnson; The Modern Hospital, November, 1966, McGraw Hill, Inc.

MEDICAL LABORATORY TECHNICIAN: CURRICULUM OUTLINE -Two Year

FIRST YEAR
FALL SEMESTER

	SEMESTER HOURS
English 131 (Freshman Composition)	3
Psychology 233 (Psychology of personal and social adjustments)	3
Zoology 133(Human Anatomy & Physiology)	3
Medical Technology 141 (Hematology)	6
	15

SPRING SEMESTER

English 132 (Freshman Composition)	3
Math 131 (College Algebra) or *Math 0-31	3
Zoology 134 (Human Anatomy & Physiology)	3
Medical Technology 142 (Urinanalysis and Serology)	6
	15

SUMMER SESSION

Medical Technology--Clinical Application I (161) (520 hours)	4

SECOND YEAR
FALL SEMESTER

	SEMESTER HOURS
Chemistry 141 (General inorganic)	4
Microbiology 135 (Unicellular plants and animals)	3
Medical Technology 241 (Clinical Bacteriology and Parasitology)	6
	13

SPRING SEMESTER

Chemistry 142 (General inorganic,Physiological)	4
Medical Technology 242 (Chemistry)	6
Government of U.S. 233 or Government 239-Survey of Government of U.S.**	3
	13

SUMMER SESSION

Medical Technology-Clinical Application II (162) (520 hours)	4

*Math--if three years high school math, this not required.

**Credit for this course will apply toward a Degree of Applied Sciences from Amarillo College. Offered for terminal credit but may be accpeted by some colleges.

Total Number of Semester Hours: 64.

MEDICAL LABORATORY TECHNICIAN: CURRICULUM OUTLINE

Semester Hours

Medical Technology 141: Hematology

A general introduction to the clinical laboratory in respect to management and ethics. Study and identification of the cellular structures of blood. Theory of coagulation. Uses of microscope and accessories and performance of diagnostic testing. 2 hours lecture, 6 hours simulated lab; 4 hours clinical experience. (Total clock hours--180)

6 hours

Medical Technology 142: Urinanalysis and Serology

Study of urines in respect to its chemical composition and cellular structures. Procedures of urinanalysis. Sera, Plasma, and body reactions to foreign matter, immunology and blood banking. 2 hours lecture, 6 hours simulated lab; 4 hours clinical experience. (Total clock hours--180)

6 hours

Medical Technology 161: Clinical Application I

Performance of urinanalysis, hematology, blood banking and serology in pathological and hospital laboratory under direct supervision in the clinical situation. 40 hours per week including 2 hours/week formal critique seminar as well as supervision by instructor.

6 hours

Medical Technology 241: Clinical Bacteriology and Parasitology

Study of pathogenic organisms, identification and culture. 2 hours lecture 6 hours simulated lab; 4 hours clinical experience.

6 hours

Medical Technology 242: Chemistry

Chemistry applied in the clinical laboratory including organic and inorganic compounds of the blood. Preparation of reagents. Introduction to laboratory instrumentation. 2 hours lecture, 6 hours simulated lab; 4 hours clinical experience.

6 hours

Medical Technology 162: Clinical Application II

Performance of chemical analysis, bacteriology and parasitology in the pathological and hospital laboratory under direct supervision in the clinical situation. 40 hours per week including 2 hours/week formal critique seminar as well as supervision by instructor.

6 hours

COURSE OUTLINE FOR MEDICAL LABORATORY TECHNICIAN:[1]

Medical Technology 141 (Hematology)

1. Orientation to laboratory--ethics, management and personal relationship to fellow workers other members of the health team.

2. Blood Collecting.

3. Use of analytical balances and trip balances.

4. Making solution
   a. per cent
   b. Molar
   c. Normal

5. Instrument use and maintenance
   a. Microscopes
   b. balances
   c. Spectrophotometer
   d. Centrifuges

6. Erythrocyte and Leucocyte counts--Hemocytometer (in hospitals--Coulter Conter)

7. Hemoglobins: Drabkins Methods

8. Hematocrits: Micro Methods

9. Sedimentation Rates

10. Erythrocyte indices

11. Erythrocyte Fragility

12. Reticulocytes

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[1] Because of the indecision from certificating bodies regarding the as yet incompletely defined two-year Medical Laboratory Technican requirements, the course outlines are included as a guide to organization of the Medical Technology courses. The Advisory Committee recommended that these particular specific subjects be included. Course outlines are not included for curriculums in the other health occupations reported.

13. Differentials

14. Coagulation Studies:
    a. Capillary bleeding and clotting
    b. Lee & White Coagulation
    c. Prothrombin)Manual
    d. Prothrombin Consumption)
    e. Platelet Counts
    f. Plasma Thromboplastin Test
    g. Fibrogen Level (Semi-quantitative)

The student will be placed in the hospital for clinical application by the third week. Spending at least four hours on Saturday or this selected time. Written and oral exams will be given periodically, with a final written exam and a practical final exam.

We will also make use of visual aids and workshops.

Medical Technology 142:

1. Urine Analysis: 5 weeks 3 sessions each week
    a. Routine
        1. Color-appearance
        2. pH
        3. Albumin
        4. Sugar
        5. Specific Gravity
        6. Microscopic

    b. Qualitative and Semi-Quantitative Tests
        1. Acetone
        2. Diacetic Acid
        3. Urobilin
        4. Urobilinogen
        5. Calcium

    c. Quantitative Albumin

2. Routine Gastric Analysis
   (taught in Hospitals)

3. Blood Banking: 5 weeks 3 sessions each week
    a. A B O Typing
    b. Rh studies
    c. General introduction to cross matching and techniques

4. Serology: 5 weeks 3 sessions each week
    a. VDRL's
    b. Anti-Streptolysis Titers
    c. C-Reactive Proteins
    d. Rheumatoid Arthritis (latex)
    e. Febrile Aggultinations
    f. Collodial Golds
    g. Cold Agglutinins
    h. Introduction to Reiter-Protein Complement--fixation.

Summer Session
Medical Technology--Clinical Application I (161)

The student will spend 520 actual clock hours working in a hospital. They will work only in the departments of hematology, urines, serology & blood banking. 40 hours per week including 2 hours/week formal critique seminar as well as supervision by instructor.

Medical Technology 241 (Bacteriology & Parasitology)

1. Sterile Technique

2. Making Media

3. Plating Cultures

4. Culture identification

5. General stain identification

6. Use of exposure plates

7. General parasitology
    a. Handling of specimens
    b. Screening of specimens

Medical Technology 242 (Chemistry)

1. Blood Urea Nitrogens
2. Blood Sugars
   a. Folins-Wu
   b. O-Toludin
3. Total Protein A/G ratio
4. Amylase
5. Bilirubin
6. Cephalin Flocculation
7. Sodium, Potassium and Calcium by flame analysis
8. Uric Acid
9. Creatinine
10. SGOT, SGPT, LDH
11. Electrophoresis
12. BMR, BMG.

In the hospitals: Auto Analyzer Methods & Blood Gases Studies.

SUMMER SESSIONS:
Medical Technology -- Clinical Application II (162)

The student will spend 520 actual clock hours working in a hospital. They will work only in the departments of bacteriology and chemistry, with general review of all procedures in latter part of clinical experience time. 40 hours per week including 2 hours/week formal critique seminar as well as supervision by instructor.

Informational Sources

"Guide Book for an Approved School of Laboratory Assistants", "Board of Certified Laboratory Assistants of the American Society of Clinical Pathologists," "Essentials of an Acceptable School for Certified Laboratory Assistants," December, 1967.

National Committee for Careers in Medical Technology
1501 New Hampshire Avenue, N.W.
Washington, D.C.

"Recognition Given to Medical Laboratory Personnel Approved by the American Society of Clinical Pathologists and the American Society of Medical Technologists," December, 1966.

John L. Goforth, M.D.
Board of Certified Laboratory Assistants, Dallas, Texas

Wellington B. Stewart, M.D., University of Kentucky Medical School, Lexington, Ky.

Elwood E. Baird, M.D., University of Texas Medical Branch, Galveston, Texas

Athalie Lundberg, M.T. (ASCP), D.C. General Hospital, Washington, D.C.

Merlin L. Trumbull, M.D., Baptist Memorial Hospital, Memphis, Tenn.

Registry of Medical Technologists, P.O. Box 2544, Muncie, Indiana 47302

Fact Sheet, Training Certified Laboratory Assistants in Junior Colleges, January, 1967.

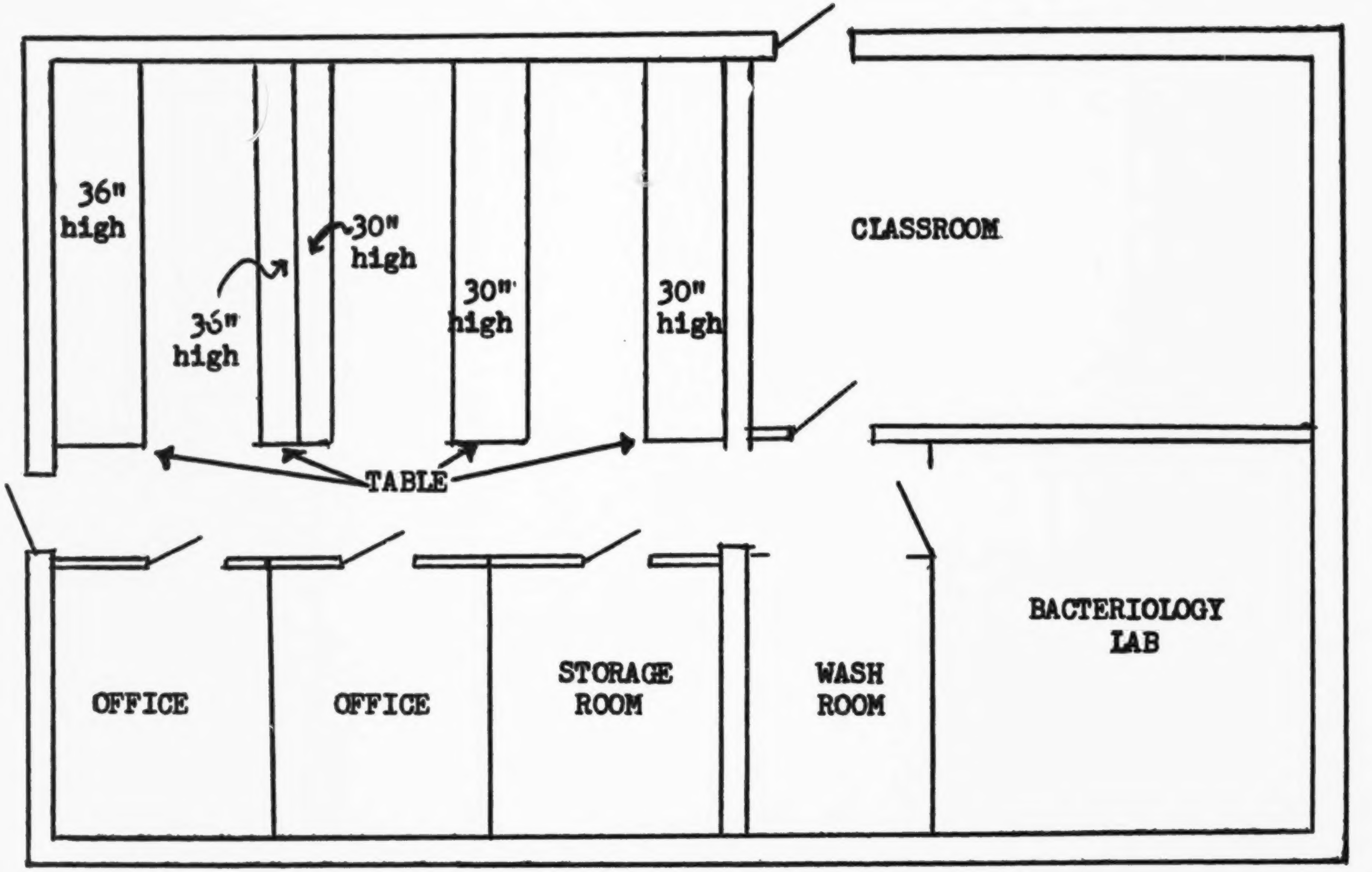
"Summary of Junior College Courses for Laboratory Assistants and Technicians, National Committee for Careers in Medical Technology, July 21, 1967."

MEDICAL LABORATORY TECHNICIAN: CURRICULUM OUTLINE - One Year*

FIRST SEMESTER	SEMESTER HOURS
English 131 (Freshman Composition)	3
Zoology 133 (Human Anatomy & Physiology)	3
Medical Technology 141 (Hematology, Serology, Blood Bank)	6
SECOND SEMESTER	
English 132 (Freshman Composition)	3
Zoology 134 (Human Anatomy and Physiology)	3
Medical Technology 142 (Chemistry, Urinanalysis)	6
SUMMER SESSION 1st Part	
Psychology 233 (Psychology of Personal and Social Adjustment)	3
Medical Technology 241 (Bacteriology)	3
2nd Part	
Medical Technology 242 (continuation of 241)	3
Government of U.S. 233	3

Additional directed clinical experience will be as an internship in local hospitals and laboratories.

*This one-year curriculum outline presented for information. It will satisfy the needs of a student who has only one year to invest in training. It will provide for job entry under the "CLA" designation of the ASCP.


36" high
36" high
30" high
30" high
30" high
TABLE
CLASSROOM
OFFICE
OFFICE
STORAGE ROOM
WASH ROOM
BACTERIOLOGY LAB

(52' x 32')

Scale 1/8" = 1'

MEDICAL LABORATORY

MENTAL HEALTH ASSOCIATE PROGRAM

Introduction

The simultaneous development of comprehensive Mental Health and Mental Retardation Programs throughout the State of Texas and the Nation is creating such a shortage of professional manpower that the utilization of semi-professionals is becoming mandatory. If services are to be rendered the public, trained team of specialists must be made available to those who need help. The frank observation has been made, however, that without an increase in the recruitment of specialists from the mental health disciplines and from other para-medical vocations, the glaring deficiency of the number of professional and semi-professional personnel available to care for the mentally impaired will become increasingly acute. A program for Mental Health Associates will decrease some of the pressures for personnel presently being experienced by mental health facilities. The Mental Health Associate will become an active member of the mental health team, working to bring an increased quantity and quality of services to people. As this name implies, the primary function of these semi-professionals will be to assist Mental Health-Mental Retardation specialists from various disciplines in diagnostic, treatment and educational and rehabilitative services to the mentally ill and retarded. At the time of this writing, it is known that three other such programs, in other areas, are in the making, or, already in operation. The Maryland Department of Mental Hygiene authorized and assisted in the establishment of such a program at Catonsville Community College and at Baltimore Jr. College. Another such program is under way at Metropolitan State College in Denver, Colorado. This was initiated by the Fort Logan Mental Health Center. A third program leading to an Associate Degree in "Child Care" is offered by Duchess Community College, New York, by the authority of State University of New York.

Job Description

The Mental Health Associate will be educationally prepared and qualified to secure gainful employment in a variety of Mental Health-Mental Retardation settings and facilities such as: Hospitals, Clinics, Day Care and other Educational, Vocational and Rehabilitation Centers. His role, as inferred earlier, will be to assist professional specialists with the execution of planned programs and services appropriate to the professional discipline to which the Associate would be assigned. He would assist the Psychiatric Nurse in the rendering of Psychiatric Nursing Services, the Clinical or Educational Psychologist in the furnishing of Psychological Services, the Psychiatric Social Worker in the Psychiatric Social Work Services, etc. His generic training and education in the sciences of mental health, the understanding and the therapeutic handling of the mentally ill or mentally retarded persons would render this person quite adaptable to various duty assignments, contingent upon the professional specialist to whom he was assigned. There is value in considering the tentative longevity of the assignment made since assignments of too brief a period would most likely jeopardize to some degree, the quality and quantity of the services provided by the Associate. The Associate will only function under the supervision of a specialist. Tangible ways in which the Mental Health Associate might assist professional specialists:

A. Physician:

1) Preparing the individual for his visit or visits with the physician through discussion with the individual and relationship interactions.

2) Organizing and making available to the physician, medical records, files and materials.

3) Completing forms, observation, study and research charts, etc.

B. Psychologist:

1) Assisting with the giving or scoring of some psychometric materials.

2) Participation in research endeavors.

3) Assuming minor responsibilites for education or treatment efforts.

4) Assisting with behavior modification programs with certain patients.

C. Psychiatric Social Workers:

1) Collecting birth, developmental and "case history" information.

2) Screening intake applicants and fulfilling the service of the intake process.

3) Doing a variety of paper work functions.

4) Assisting with education, treatment, rehabilitative functions, etc.

D. Certified Occupational Therapists:

1) Assisting the therapist in the execution of services in this department.

E. Psychiatric Nurse:

1) To assist the nurse in charge to provide a comfortable, safe and therapeutic environment for the ill person or the retarded involved.

2) To help create and reinforce through their supervised involvement, a milieu atmosphere and to help strengthen interpersonal relations.

3) Assist nurse in treatment and rehabilitative services provide the individual.

4) To assume the responsibility under supervision to be the leader and/or director of secondary treatment groups and activities, etc.

F. Teachers:

1) To assist the teacher in the classroom setting to fulfull the educational plan.

2) To assist mentally ill or retarded children with educational and remedial learning, mechanical aids and devices.

3) To assist with tutoring assignments, etc.

G. Speech Therapists: To assist with the rendering and fulfillment of this service.

Depending upon the facility involved and the services offered by it, as well as the individual's prior experience and qualifications, the Mental Health Associate could perform any or all of the described duties and functions. The Associate would most likely be assinged to the disciplines or categories of A, B, C, E and F but likely could be used in the others.

Practitioner Requirements:

At the present time, due to the professional "youthfulness" of this vocation, the practicing level requirement will be an "Associate Degree" or diploma certification. This will be conferred upon the student when he has satisfied Amarillo College curriculum requirement established for this position. It is conceivable that in time, when this new semi-professional position has demonstrated its usefulness and effectiveness, that state and perhaps national standards and organizations will come into being.

Employment Data:

An area assessment or survey of the need for such a trained person as the Mental Health Associate, indicates such a semi-professional is quite in need. At the present time, certain personnel are working in similar, if not the same capacities but these people are poorly equipped to do so. Their educational background and preparation is insufficient to enable them to assist in the care and treatment of the mentally ill and retardates as efficiently as they could. This program is designed to bring into action a large segment of the population who have good intellectual capacity and potentials for therapeutic, interpersonal relationships.

The remuneration scale, or salary which could be anticipated should be very competitive for individuals with two years of college, and Associate Degree or technician qualification and training.

The need for a person with these knowledges and skills is further intensified in this locale by the development and expansion of the Amarillo Medical Center.

Mental Health Associate Program

Cost:

Faculty:		
Teacher-Coordinator	$920.00	
Consulting Director	300.00	1,220.00
Supplies:		
Teaching Supplies	200.00	
Duplicating	75.00	
Library	150.00	425.00
Total		$1,645.00

Curriculum:

See attached.

MENTAL HEALTH ASSOCIATE CURRICULUM TRANSCRIPT

FIRST YEAR

FALL SEMESTER

	SEMESTER HOURS
English 131 (Freshman Composition)	3
Mathematics 131 or 135 (College Algebra)	3
History 137 (History of the U.S.)	3
Biology 131 (General Biology)	3
Clinical Course 131 (Includes Laboratory)	3
Physical Education	1
	16

SPRING SEMESTER

English 132 (Freshman Composition)	3
Mathematics 136 (Trigonometry)	3
History 138 (History of the U. S.)	3
Biology 132 (General Biology)	3
Clinical Course 132 (Includes Laboratory)	3
Physical Education	1
	16

SECOND YEAR

FALL SEMESTER

English 231 (Survey of English Literature) or English 233 (Introduction to Literature I)	3
Government 233 (Government of the U.S.)	3
Sociology 237 (Social Principles and institutuions) or Psychology 231 (General psychology)	3
Anatomy & Physiology (Zoology 133)	3
Clinical Course 231 (Includes Laboratory)	3
	15

SPRING SEMESTER

English 232 (Survey of English Literature) or English 234 (Introduction to Literature II)	3
Government 234 (Government of the U.S. and of Texas)	3
Psychology 233 (Psychology of personal and social adjustments)	3
Psychopathology	3
Clinical Course 232 (Includes Laboratory)	3
	15

TOTAL NUMBER OF SEMESTER HOURS: 62

Mental Health Associate Program

Clinical Course Descriptions: Course 131 - 132 - 231 - 232

* 131 - Dynamics of Emotional Illness and Retardation in Children

(First Semester, first year - three hours credit)

The objective of this course is to develop within the student an expanded understanding of emotional illness and mental retardation and the usual accompanying behaviors and characteristics of these conditions.

* 132 - Dynamics of Emotional Illness and Retardation in Adults

(Second Semester, first year - three hours credit)

The objective and focus of this course are the same as those in course 131, however, the incapacitation in adults is viewed. Course 131 is a pre-requisite for this course.

* 231 - Dynamics of Therapeutic Interaction and Intervention

(First Semester, second year - three hours credit)

A more advanced course built upon the learning foundation of courses 131 and 132 which are prerequisites for this course. This unit has the objectives of providing the student increased insights concerning, and an astutue awareness of his own feelings and responses to the pathological behaviors and problems of children with emotional and mental illnesses and retarded conditions.

* 232 - Dynamics of Theraupetic Interaction and Intervention

(Second Semester, second year - three hours credit)

The objective and focus of this course are the same as those in course 231, however, the awareness and feelings considered are in relation or in response to the pathological behaviors and problems of adults with emotional and mental illnesses and retarded conditions.

* Two Hour lecture - three hours laboratory (clinical facility).

Mental Health Associate Program

Advisory Committee

Jaime Quintanilla, M.D., Chairman - Director, Killgore Children's Psychiatric Center, Amarillo, Texas

William E. Raab, Ed.D., Dean of the College, Amarillo College, Amarillo, Texas

Calvin Yokum, M.S.W., Chief Psychiatric Social Worker, Killgore Children's Psychiatric Center, Amarillo, Texas

Information Sources

Correspondence:

White, Russell - Administrator, the Amarillo State Center for Human Development, Amarillo, Texas

Baggett, Dewey - Administrator, The Psychiatric Pavilion of Northwest Texas Hospital, Amarillo, Texas

McPheeters, Harold L., M.D. - Associate Director for Mental Health Training and Research, Southern Regional Education Board, 130 South Sixth St. NW, Atlanta, Georgia

Walters, Steve - Administrator, Northwest Texas Hospital, Amarillo, Texas

Hastings, Chester R. - Dean of the College, McLennen Community College, Waco, Texas

Conklin, Sarah - Administrative Consultant, Community Services Division, Texas Department of Mental Health and Mental Retardation, Box S, Capitol Station, Austin, Texas

Bettis, Moody C., M.D., Houston State Psychiatric Institute, Texas Medical Center, 1300 Moursund Avenue, Houston, Texas

Interviews:

Fairchild, Lewis, Ph.D., Chief Psychologist, Killgore Children's Psychiatric Center and Hospital, Amarillo, Texas

Medical Health Associate Program

Interviews continued

Sauter, Vernon, M.S.W. - Chief Psychiatric Social Worker, The Psychiatric Pavilion of Northwest Texas Hospital

DeFever, Lany Lee, C.O.T. - Occupational Therapist, The Psychiatric Pavilion of Northwest Texas Hosptial, Amarillo, Texas

Henager, Miss Jeanie, R.N. - Supervising Psychiatric Nurse, Killgore Children's Psychiatric Center and Hospital, Amarillo, Texas

Kruckeburg, Mrs. Marjorie, M.S.W. - Chief Social Worker, The Amarillo State Center for Human Development, Amarillo, Texas

Publications

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INHALATION THERAPY TECHNOLOGY

(Inhalation Therapist, Respiratory Technician, Oxygen Therapist)

Introduction

The hospitals of Amarillo and the referral area share the shortage of registered inhalation therapists with the rest of the nation. There is one (1) registered inhalation therapist in the community. The hospitals have found it necessary to be on the job through the cooperation of anasthesiologists, chest surgeons, and specialists in internal medicine with special interest in diseases of the chest (asthma, emphysema, bronchiectasis, cardio-pulmonary disease) to cooperate with the in-service education departments of the hospitals to train "oxygen therapists" to administer oxygen, respiratory tract lavage, aersol therapy, and to operate and maintain the instrumentation and machinery involved. This service was formerly (as in many other ancillary patient procedures administered by the registered nurse, but has become too highly developed to be considered as limited to a nursing procedure and is unrealistic to ask a registered nurse to be responsible for.) Safety for the patient for whom the responsibility of respiratory tract is delegated to an on-the-job trained person is questionable. A responsible, dependable, safe respiratory therapy technician can be developed in an 18-month to 24-month combined hospital, community college program. It is a clinically oriented technology to oftimes critically ill patients. As of September 15, 1967, there were only 31 approved school of inhalation therapy by the Council on Education of the American Medical Assoication.

Job Description

Administers oxygen in prescribed dilutions to patients according to physicians' orders, using a variety of methods such as intra-tracheal, cannula, mask, and tent. Administers medications by aerosol and nebulization. Frequently copes with emergency situations, demanding an immediate judgement. Communicates with patient regarding therapy acceptance. Instructs patient in self-use of inhalation therapy technique. Must care for and maintain and manipulate the equipment (often heavy), and particularly guard in asepsis.[1] Must instruct others on health team in use of inhalation therapy techniques. In larger hospitals, is in a separate department responsible to Medicine or Anesthesiology. In smaller hospitals, may be responsible to nursing service.

Licensing, Registry

No licensing is required. There is a registry with specified requirements for application and examination of the American Registry of Inhalation Therapists which then issues certification. The Council on Medical Education of the American Medical Association recommends standards for accreditation for Schools of Inhalation Therapy. The standards are for clinical instruction and experiences.

Employment Data

Registration and certification is not necessary for employment. In a hospital of 200 beds, approximately nine (9) individuals would be employed in this job category. One (1) registered inhalation therapist is in this community. The other employees are of varying levels in the technology. The salary for the registered therapist is commensurate with that of the supervisory nurse, approximately $800 per month. The assisting personnel are approximately $500 per month at this time. The position is not filled in the smaller hospitals of the area for lack of personnel, but duties are performed by nursing personnel.

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[1] Vernon Knight, "Instruments and Infection," Hospital Practice, Vol. 2, p. 82, September, 1967.

Cost:

The Inhalation Therapy or Respiratory Therapy Technologist program would require a simulated inhalation therapy laboratory on campus, equipped with the necessary instrumentation and hand tools with one registered inhalation therapist-instructor to initiate implementation. Estimated total cost - $45,000 capital equipment investment and $10,000 to $15,000 personnel costs.

Curriculum

The program for inhalation therapy is conceived as preparing for the qualification of the professional registration requirements and standards. Curriculum as recommended by the Council on Medical Education of the American Medical Association is a clock hour program: 1800 hours total; divided into 600 theory, 600 directed practice, and 600 hours of clinical practice; the latter including 100 hours in nursing arts. A two-year community college and affiliated hospital program could consist of approximately 40% general and supportive education, and 60% technical. The supporting education should include anatomy and physiology, microbiology, chemistry, pathology, psychology, and physics. The technical education should include procedures, gas analysis, airway management, oxygen and other gasses administration, humidification and aerosols, ventilation assistance and control, resuscitation, lung physio-therapy, spirometry, equipment and maintenance. The directed clinical experience is in the hospital situation.[1]

This curriculum guide would prepare the student with the requirements for the Registered Inhalation Therapist examination. Because of the need, other schools have designed one-semester, one-year, and two-year programs for various level qualifications as a respiratory therapist-technician.[2] However, an undiluted program toward the preparation and development of the technologist would need to be established and secured first as qualified faculty becomes available.

It is recommended that Amarillo College finalize curriculum plans and implementation of the Inhalation Therapy Technician Program for the Fall of 1969 and recruit a registered Inhalation Therapist instructor to coordinate with the internist, chest surgeon, and anesthesiologists already present in the community.

Advisory Committee

Richard T. Archer, M.D., F.A.C.P.
T.W. Nicklaus, M.D., F.A.C.P., Certification, Sub-specialty in Pulmonary Disease
Gary R. Girard, Reg. I.T.

Informational Sources

[1] Basic Curriculum - "Essentials of an Acceptable School for Inhalation Therapy Technicians," Council on Medical Education of the American Medical Association, December 1, 1967, page 4.

Board of Schools of Inhalation Therapy Technicians of the Council on Medical Education of the American Medical Association, Cook County Hospital, Chicago, Illinois.

[2] Inhalation Therapy Program, El Centro Junior College, Dallas, Texas

American Association for Inhalation Therapy, Clocker-Citizens Building, Main Street, Riverside, California

Puritan Compressed Gas Corporation, Puritan Building, Oak at 13th Street, Kansas City, Mo.

Davis, H. E., *Inhalation Therapy Curriculum*, Allied Medical Development Project, The Junior College District of St. Louis, April 15, 1965, Appendix H (unpublished).

"Respiratory Therapy Technician Program," Catalog 1968-69, South Texas Junior College, Houston, Texas, page 38.

Inhalation Therapy Program, El Centro Junior College, Dallas, Texas

John S. Chapman, M. D., University of Texas School of Medicine, Galveston, Texas

Cone Johnson, M. D., Scott & White Clinic, Temple, Texas

John S. Briggs, R.I.T., Mount San Antonio College, 1100 N. Grand Avenue Walnut, California

George M. Fleming, Ed. D., Director, Allied Health Regional Medical Program, Baylor University College of Medicine and Methodist Hospital, Houston, Texas

Vernon Knight, "Instruments and Infection," Hospital Practice, Vol. 2, page 82, September, 1967.

FOOD SERVICE SUPERVISOR

Introduction

Interviews with dieticians, food service managers, hospital administrators, and nursing home administrators in the Amarillo Area brought into sharp focus the need for the trained food service supervisor. Incorporating this type of program into the community college could be done with relative ease as it would be basically the same course of study as the restaurant management program. Specialized course work directed towards institutional food service could be introduced the second year of the two-year training program for restaurant management with sufficient time alloted to hospital or health service course work and clinical experience. The primary need in the area was expressed by those institutions who cannot obtain the services of a dietitian but who may obtain the services of a consulting dietician. Local interviewees suggested a current trend towards a new type of Hospital Food Service from the present traditional therapeutic diet-oriented type of service headed up by a dietician to a Food Service Supervisor who assumes a managerial role in hospital employment.

Job Description

Specific tasks involved in the position of the Food Service Supervisor envisioned in this training program are as follows:

I. Supervision of operation of kitchen food service.

A. Ordering, purchasing, and inventory of food and supplies.

B. Use, cleaning, and maintenance of food preparation and food service equipment such as dish machines, slicers, food grinders, mixers, steamers, french fryers, ovens, griddles, special knives, hot carts, etc.

C. Hiring, scheduling, and management of personnel.

D. Supervision of operative personnel in preparation and service of food in large quantities.

E. Teaching personnel the use and care of equipment and food preparation technique.

F. Improving operating efficiency of food preparation and food service--more effective use of time and effort of personnel.

II. Diet therapy function

A. Working under the consulting dietitian, interpreting menus and diets prepared by her.

B. General menu planning for regular diets.

C. Some explanation of elementary diet therapy techniques to operative personnel and patients when a dietitian is not available for these duties.

The extent to which any of these activities is done independently of the consulting dietitian will vary among institutions.

Licensing, Registry, Existing Requirements

There is at present no licensing or registration for any food service worker less than a five-year trained dietitian. Scattered courses for food service supervisors do exist in which certificates are awarded at the completion of the courses, e.g. the course offered by the Catholic Hospital Association which awards a certificate and entitles the graduate a membership in the Society for Food Service Supervisors which the American Dietetic Association sponsors.

Employment Data

In a sparsely populated area such as the Amarillo Medical Referral Area, the concept of the semi-professional dietary employee was enthusiastically received as there is a critical shortage of professional dietitians. The small hospital and the nursing homes expressed keen interest in the development of this semi-professional who could function independently with schedule services of a consulting dietitian. The large hospitals would use this person at the management level in the Food Service Department, and as one who could be versatile enough to supervise any of the various special departments within a large institution, e.g. tray or assembly line area, dishroom, diet section, etc.

Curriculum

Curriculum for the restaurant management program is already in existence at Amarillo College. It is described as "general course for men or women who plan to work in commerical restaurants, hotel-motel food services, institutional food services, cafeterias or food catering operations." To augment this establishment program of training, it would be wise to consult the Post-High School Curriculum Guide in Institutional Food Service Supervision which will be published through the U.S. Government Printing Offices in 1968. Specific guidelines for curriculum for the two-year associate degree program, as approved by the A.D.A., are included in this report. The general consensus of opinion is that the first year of training will be the same as restaurant management while special, health oriented course work will be introduced the second year to those persons who choose to complete the training as a Food Service Supervisor.

Recommendations

It is recommended that this program be implemented in the Fall of 1969. By the Fall of 1969, the Restaurant Management Program will have been in operation one full year and will be better able to assume a sub-division within its offerings.

Information Sources

Burke, Jeanne, Chief Dietician, Northwest Texas Hospital, Amarillo, Texas

Dutton, Robert, Assistant Administrator, Northwest Texas Hospital, Amarillo, Texas

Emerson, Elma H., Chief Dietician, Veteran's Administration Hospital, Amarillo, Texas

Martin, William, Food Service Manager, Northwest Texas Hospital, Amarillo, Texas

Lutkus, Alice, H., Food Service Supervisor Course Director, The American Dietetic Association, 620 North Michigan Avenue, Chicago, Illinois 60611

Sister Rose Genevieve, C.S.J., Dietary Consultant, The Catholic Hospital Assoication, 1438 South Grand Boulevard, St. Louis, Missouri 63104

Williams, Everett, Dean, Amarillo, Amarillo College

PHYSICAL THERAPY ASSISTANT

Introduction

Interviews were conducted with physical therapists, physicians, Registry personnel, and a representative of the Health Care Facilities for Nursing and Convalsecent Homes for the Texas Department of Public Health. Responses represent current views of the use of the physical therapy assistant. Since this is an emerging or developing position, having been officially recognized for the first time in July, 1967, by the American Physical Therapy Association, the need and use of these persons in the health services should be under constant review for the feasibility of establishing training programs in the community college. When professionally staffed clinical facilities become available for training the semi-professional in Physical Therapy, then it behooves the community college to consider the training of the physical therapy assistant as one of its significant health technology offerings. Through the leadership of the professsional bodies, health facilities should be educated to the proper utilization of the physical therapy assistant prior to enforced federal regulations, e.g. Medicare. This type of education activity should be on-going and cognizant of the current research for the training and utilization of health manpower.

Job Description

The present status of the physical therapy assistant for those departments contacted is that of "trained orderly or aide." He is directly responsible to the physical therapist for all activity.

An assistant may work with a registered physical therapist in the following ways: Prepares patients for treatment (transports, helps with dressing or undressing, accompanies patient to treatment room); assists therapist with treatment (positioning, physically supporting with use of proper devices, assembles equipment for therapist); prepares tanks and baths; administers whirlpool treatments; and observes patients during treatments.

Standardized training is just becoming available through guidelines being constructed by the American Physical Therapy Association. The present assistants perform according to the needs of the particular department in which they are employed. On-the-job-training has been the standard type of training to date and varies with the type of unit; for example, the Amarillo Cerebral Palsy Treatment Center concentrates on "activities of daily living" in working with their patients.

Licensing, Registry

On July 5, 1967, the American Physical Therapy Association issued a policy statement on the training and utilization of the Physical Therapy Assistant. This statement includes a recommendation for mandatory licensure or registration for the physical therapy assistant.

Employment Data

Interviews in the Amarillo Area indicate the position now in demand is that of the trained orderly or aide. The Director of Physical Medicine for the Bivins Rehabilitation Center has asked for a vocationally trained person with perhaps "six months" training to fill his training needs. Salary ranges start at below $200 per month and range upwards according to the experience of the worker. Increase in the number of chronic care hospitals and nursing homes may increase the demand for the semi-professional person as the federal regulations for Medicare require licensed personnel. A great deal of concern was voiced by the registered physical therapists for the potential harmful consequences to patients through lack of highly professional knowledge and skill in therapeutic media.

Curricula

In the statement of policy of the American Physical Therapy Association on July 5, 1967, educational requirements recomended were as follows: "The educational program for the physical therapy assistant shall be a two-year college level leading to an associate degree and shall include some course work which may be credited towards requirements leading towards a higher degree." Specific course requirements are not yet available through the accrediting body.

Recommendations

A training program for the Physical Therapy Assistant is not recommended for immediate implementation. As the planned rehabilitative services develop within the Amarillo Medical Center and the number of registered physical therapists increases, review and evaluation of the need for the trained physical therapy assistant should be made. Employability of the assistant is dependent upon direct supervision by the registered therapist, therefore, actual numbers in the professional level are an important consideration. Curriculum development should be accomplished in close cooperation with the American Physical Therapy Association for this semi-professional training program when need is established.

Information Sources

Balke, Richard, P.T., Director, Amarillo Cerebral Palsy Treatment Center, 808 Crockett St., Amarillo, Texas

Goodwin, John, P.T., Northwest Texas Hospital, Department of Physical Therapy, Amarillo, Texas

Johnson, James L., M D., Director, Bivins Rehabilitation Center, High Plains Baptist Hospital, Amarillo, Texas

Keister, James D., P.T., Bivins Rehabilitation Center, High Plains Baptist Hospital, Amarillo, Texas

Sadler, C.B., M.D., Orthopedist, Amarillo, Texas

Phillips, Beth J., Consultant, Division of Education, American Physical Therapy Association, 1740 Broadway, N. Y., N. Y. 10019

Selke, Oscar O., M.D., Hermann Professional Building, Houston, Texas, Board Member, American Registry of Physical Therapists

Tullos, R. Ward, Inspector, Health Care Facilities, Division of Nursing and Convalescent Homes, Texas State Department of Public Health, Austin, Texas

OCCUPATIONAL THERAPY ASSISTANT

Introduction

Interviews were conducted with registered occupational therapists, a certified occupational therapy assistant, and nursing home administrators in the Amarillo Area Survey was conducted (November, 1967). There was no registered occupational therapist employed in the entire 57-county area and only two occupational therapy assistants. Since then, an OTR has been employed by the Psychiatric Pavilion of Northwest Texas Hospital with four additional assistants being added to the staff. Rapid development of rehabilitation services in the Amarillo Medical Center will undoubtedly bring in more professional personnel so that the need for the semi-professional, such as the Occupational Therapy Assistant, will increase sharply.

Job Description

The preparation of the occupational therapy assistant equips him to fulfill the following functions and specifies the degree of supervision necessary by the graduate occupational therapist:

1. General Activity Programs-- designed to improve hospital milieu and increase patient morale. Activities include general recreation, such as movies, dances, and parties and the non-specific use of music, library, arts, and crafts, etc.

2. Supportive or Maintenance Programs--those in which activities are performed by patients to maintain benefits of prior treatment, to encourage the highest level of function and rehabilitative goals.

3. Specific Treatment Programs--for patients in the acute state of illness or disability. This means the use of activities to correct or

improve specific pathology and involves controlled interaction with the patient for therapeutic results.

The occupational therapy assistant functions only as an assistant to and under the direct supervision of a graduate occupational therapist in the treatment of patients referred for specific treatment.

If there is temporarily no graduate occupational therapist available, the occupational therapy assistant should use activities as indicated in the supportive or general type of program.

Licensing, Registry; Existing Requirements

Since 1958, The American Association of Occupational Therapists has approved training programs for Occupational Therapy Assistants and has provided certification on a three-year basis for graduates of approved programs who apply for certification. Requirements regarded by the AOTA for the approval of training programs are as follows:

1. Established need for program
2. Appropriate sponsorship
3. Consultation with AOTA
4. Use of community resources
5. Minimum staff requirements
6. Financial resources
7. Facilities and equipment
8. Training program
    a. Admission
    b. Size, length and content
9. Records and forms
10. Use of appropriate procedures for endorsement
11. Conditions for continued endorsement

Employment Data

On the basis of the health manpower survey conducted in the Amarillo Area, the lack of registered occupational therapists in the area at the present time prohibits employability of persons trained at the assistant level because of supervisory requiremnts. With the rapid expansion of rehabilitative services in the Amarillo Medical Center, the prospects of bringing in registered occupational therapists are quite good. When this professional need is met, then the semi-professional will be needed in a ratio of about six (6) assistants to one (1) professional.

Curricula

In a policy statement by the American Occupational Therapy Association in February, 1967, the following instructions were issued:

> "Training programs for occupational therapy assistants shall be a minimum of 750 clock hours, to be allocated as follows:
>
> | | |
> |---|---|
> | Academic Instruction | 260 hours |
> | Skills Instruction | 230 hours |
> | Practical Experience | 250 hours |
> | Evaluation | 10 hours |
>
> The duration of the program shall be no less than 20 nor more than 25 consecutive weeks unless prior concurrence is obtained from the American Occupational Therapy Association."

Adapting this training program to the community college two-year program would require very close cooperation with the AOTA to establish essential general education curriculum and its correlation with clinical experience.

Recommendations

A training program for the Occupational Therapy Assistant is not recommended for immediate implementation. Re-evaluation of need for this training program should be made within six months to one year of the filing of this report because there are indications that rapid expansion of rehabilitation services in the Amarillo Medical Center will accentuate the need for the occupational therapy assistant.

Information Sources

Chappel, Myrna, COTA, Psychiatric Pavilion, Northwest Texas Hospital, Amarillo, Texas

DeFever, Larry, OTR, Psychiatric Pavilion, Northwest Texas Hospital, Amarillo, Texas

Hayes, Helen, Administrator, Elizabeth Jane Bivins Nursing Home, Amarillo, Texas

Noler, Loyd, Administrator, Thurmon's Convalescent Home, Amarillo, Texas

Anderson, Carol R., Ed.D., OTR, Professor of Education and Psychology, West Texas State University, Canyon, Texas

American Occupational Therapy Association, 251 Park Avenue South, New York, New York 10010

BIOMEDICAL EQUIPMENT TECHNICIAN (BMET)

Introduction

Particularly during the interviews with hospital administrators and managers of medical supply houses did the need for maintenance and repair of exquisite as well as relatively simple medical equipment arise. The principal need arises in the repair of electronic equipment or electronic components of equipment. Traditionally the custodial engineering department of the hospital has been responsible for this service. The more exquisite equipment is designed in modular form in order that in repair and replacement that the individual modules can be removed, air expressed to a regional factory center for repair and concurrently a replacement module is air expressed to the health facility. In areas similar to Amarillo the delay is at the least 5 to 12 hours without functioning equipment. Feasibly, spare modules kept in inventory represent a disproportionate investment of capital funds for the institution.

Oftimes, the malfunction of the equipment could be corrected by a simple repair maneuver by the M. and R. department of an institution if the worker is aware of the schematic design of the instrument if he had also a basic understanding of the design, construction, and function of the instrument. The same situation arises for medical equipment supply houses who have the obligation to service equipment which they market in the area.

Job Description

In the health facility it is this person's responsibility to maintain the equipment utilized in diagonis, treatment and monitoring of the patient during the course of his illness from the use of the electrocardiograph to the heart lung machine. In the laboratories he is to maintain, service, calibrate, make simple repairs and identify instrument dysfunction by unusual readings or results, such as may occur in use with the patient tested or monitored. This person must be able to demonstrate and direct others in the use of the instrument. In the factory or sales, engineering and equipment service centers, the worker would be more "machine oriented."

Licensing and Registry

There are no licensing nor registry requirements. Many biomedical equipment manufacturers issue certificates of completion of concentrated short courses with certain instruments which they manufacture.

Employment Data

In Amarillo, the employment for the worker in the health institution would be limited to approximately 3 or 4. The purchasing agents or engineers responsible for the maintenance of equipment and trouble shooting would prefer to order from an instantly available central servicing agency. There is insufficient work at one 250-bed hospital to warrant full time employment of such personnel unless they were incorporated into the custodial engineering division of the hospital.

That BMET in the sales, equipment, and engineer or service contract agency would leave openings for approximately 10 employees. These would most likely be traveling-type positions and would be related to sales and service.

Costs

In the electronics division of the Technical School of Amarillo College, the only additional cost other than added instructional personnel would concern the cost of the biomedical equipment or modular positions. If the instruments were to be purchased, approximately $100,000 would be committed. It is likely that these instruments for teaching purposes could be on loan by the medical equipment manufacturers, for they rapidly become obsolete.[1] In a laboratory the shop could cost an estimated $250,000 per year including personnel, especially if research was also involved. For the education program of the technical worker alone, the cost would approximate $50,000 per year after initial investment in the shop.

Curriculum

The basic component of most modern instrumentation is electronics. The present curriculum in electronics at Amarillo College with the addition of the technical instruction regarding the transducer of the particular instrument or group of instruments should be incorporated in the planning as well as the orientation to body functions and instrument purpose. Generally the components are:[1]

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[1] Goodman, Lester and Debroske, John M., The Shop, B.I.A.C. Information Module #17, AIBSBIAC, Washington, D.C., May, 1968.

General Education	15%
Supportive Education (Mathematics - algebraic, trigonometric and calculus principle) (Science - physics, mechanics, electricity)	26%
Biological Auxiliary (selected anatomy, physiology, body functions and patient orientation)	10%
Technical Instrument Courses	49%

Recommendations

Follow the program for the B.M.E.T. training as instituted by the Technical Education Research Center of Springfield, Massachusetts, and the curriculum implemented at the Springfield Technical Center and at James Connally Technical Institute of Waco, Texas, which are designed for the worker to be employed in manufacturing, engineering, and sales. Continue to follow the program of the City University of New York which is more oriented to the person employed in the Health Facility and more patient related. Plan for implementation with the cooperation of the Electronics Division of the Technical Department of Amarillo College if there is an area designation for this education here. Such workers, though needed, are not needed in as large numbers in health institutions as they are in manufacturing and distributing centers. Establish on demand and request from the health community, short term seminar type of training for certain aspects of Biomedical Equipment Technology.

Advisory Committee

F. E. Favreau, Purchasing Agent, Northwest Texas Hospital

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[1] Busser, John H., "The Biotechnician," Bio Science, Vol. 18, No. 5, p.433, May, 1968.

R. A. Van Blommestein, Engineer, Nunn Electric Company
Larry Masten, Electronics Faculty, Amarillo College

Informational Sources

Technical Education Research Center, Armory Square, Springfield, Mass. 01105
American Institute of Biological Sciences Bioinstrumentation Advisory Council, 3900 Wisconsin Ave., N.W., Washington, D.C. 20016

Association for the Advancement of Medical Instrumentation, 19 Brook Road, Needham Height, Mass. 00214

James Connaly Technological Institute, Waco, Texas

Health Technologies Teacher Preparation Center, City University of New York, 33 W. 42nd. St., New York, N.Y. 10036

Source Persons

Muriel Ratner, City University of New York

L. A. Geddes, Baylor University, College of Medicine, Department of Physiology

WARD SERVICE MANAGER

In recent years the nursing profession has made a concerted effort to sort out the unit or ward management duties from the nurses' functions. The service management group as established in Barnes Hospital, St. Louis, may consist of three (or fewer) people: the manager, the clerk, and an aide.[1] Duties that have been assumed by the head nurse in the past but which can be identified and relinquished to the management group are: housekeeping duties, including responsibility for cleaning patients' units; dietary duties, including the actual serving of diets and the removal of trays; and in many hospitals, the preparation and distribution of pharmaceuticals. Dependent upon the individual hospital's concept of this job, it could be a management position trained through the baccalaureate program in Business Administration or, as conceived in the St. Louis Junior College District, a branch of the associate degree program for the Hospital Administration Assistant. Specific duties will include: constant contact with the housekeeping and maintenance departments; continuous adequate inventory of supplies and equipment; time schedules; messenger service; transportation of patients; budgeting cost control and economy of utilization, as related to a patient unit. Duties of a more general nature may involve accumulation of data for re-evaluation of existing procedures, quality control, sanitation and orientation and on-the-job training of service department personnel.[2]

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[1] Barnes Hospital, St. Louis, established a Service Manager System in October, 1963, to service the physician and the nurse, thereby allowing them to give better patient care. Training for this team was on an in-service basis.

[2] Allied Medical Development Project, The Junior College District, St. Louis, St. Louis County, Missouri

Ward Service Manager

Curricula envisioned for this position, trained at the Junior College level, would include English Composition; Business Math; Human Relations; Hospital Organization; Medical Records; principles from Bacteriology, Medical Asepsis, and Personal Health and Hygiene; Medical Ethics and Law, Hospital Management Skills, and Hospital Clinical Experience. Affiliation with hospitals for directed clinical experience will be essential to enable the student to learn the interdepartmental functions in a hospital setting.

Cost of developing this training program will not involve unusual expenditures; a simulated unit station for campus laboratory work will provide for a greater number of students than could be trained in hospital clinical facilities alone.

This career would be most suitable for the mature person with previous experience in business or public-service oriented working experience, preferably in a supervisory capacity.

Although the concept of Ward Service Manager is new in Amarillo, two hospitals are experimenting with the position of Unit Manager (a managerial position over four wards or a Nursing Division on one floor) with supervisory capacity to the Ward Clerk who would man each unit. It is recommended that these positions be evaluated for job function and acceptance by the hospital community before consideration is given to developing a training program in Amarillo College.

Since this is an emerging occupation, it is recommended that an Advisory Committee be selected for evaluation and development of the Ward Service Manager for Amarillo College.

Ward Service Manager

Informational Sources

Ann J. Campbell, Administrative Assistant, Nursing Service, Barnes Hospital, Barnes Hospital Plaza, St. Louis, Missouri 63110

John T. Farrell, Sr., Department Head, Service Unit Department, University Hospital, The Universtiy of Michigan Medical Center, Ann Arbor, Michigan 49104

R. Mason, Director, Policy and Procedure, Presbyterian-St. Luke's Hospital 1753 West Congress Parkway, Chicago, Illinois 60612

Michael R. Schwartz, Assistant Director, Shands Teaching Hospital and Clinics University of Florida, Gainesville, Florida 32601

Allied Medical Development Project, The Junior College District, St. Louis County, St. Louis, Mo., "Ward Manager Service,"April 15, 1966.

OPTICIAN

Requests by ophthalmic and optometric interests in the area lead the project staff into the investigation of the possibility of establishing a training program in opticianry at Amarillo College.

The American Board of Opticianry has prepared Guidelines to assist junior colleges who wish to establish a degree program in Ophthalmic Dispensing or a diploma program in Ophthalmic Mechanics. Ophthalmic Dispensing has as its objectives the training of the semi-professional individual who will have proficiency and competency to fill accurately, prescriptions for corrective lenses; recognize visual and ophthalmic conditions requiring practices relating to Ophthalmic Dispensing. The Diploma program in Ophthalmic Mechanics is designed to develop skills in Laboratory Techniques. The main emphasis is to gain proficiency in the surfacing and finishing operations which will make the graduate immediately employable in Optical Laboratories.[1]

Close examination of local need for manpower in these two occupations revealed that turnover is quite low. When vacancies occur, there might be a momentary crisis, however this situation does not happen often.. The trend for supplying the industry has been to bring workers up through the ranks so that dispensing technicians are often former workers who started in the shop or optical company and received on-the-job training.

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[1] Guidelines for the Establishment of Collegiate Courses in Opticianry, American Board of Opticianry, 821 Eggert Road, Buffalo, New York.

Industry growth appears to be in the direction of contact lenses. Training for this type of eyewear requires education beyond the junior college level at this time. Industry expansion in this new direction may call for revision in training programs so that new occupational groups will occur within Opticianry. It is recommended that needs in this occupational area be under review for possible future program development at Amarillo College.

Informational Sources:

Frank X. Brandstetter, Executive Secretary, American Board of Opticianry, 821 Eggert Road, Buffalo, N. Y., 14226

C. H. Wynn, Manager, American Optical Company, Amarillo, Texas

Fred H. Gleason, Optician, Amarillo, Texas

Hugh A. Sticksel, Optometrist, Amarillo, Texas

William J. Campbell, M.D., Opthalmologist, Amarillo, Texas

PROSTHETIST AND ORTHOTIST

The prosthetist and orthotist work closely with the physician, surgeon, and therapist to provide total rehabiliation serves for the disabled. Requests for investigation of setting up training for this technology came from the developing interests in Amarillo Medical Center rehabilitation services. The prosthetics makes and fits artificial limbs, while the orthotist makes and fits orthopedic braces to support weakened body parts or to correct physical defects, such as spinal malformations. Both work from a physician's prescription, to make appliances giving the patient maximum comfort and function. Their work begins after consultation with the patient and with careful and accurate measurements. With this information they design an appliance that will meet the indivdual needs of the patient, constructing it from various materials such as plastic, leather, wood, steel, and aluminum.[1]

"Academic training, approved by the American Board for Certification in Orthotics and Prosthetics, may be under either a two or four year training program whose curriculum is approved by the American Board. Under the two-year academic program, the one that would be applicable to Amarillo College, students must have completed two additional years of fittings under supervision of a Certifee in the discipline in which the applicants took their academic training."[2] Under the auspices of the American Orthotic and

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[1] Health Careers Guidebook, U.S. Department of Labor, Manpower Administration.

[2] The Book of Rules of the American Board for Certification in Orthotics and Prosthetics, Inc.

Prosthetic Association, guidelines and model curricula are being developed to assist junior colleges to initiate training programs leading to the Associate Degree. According to Herbert B. Warburton, Executive Director, these materials will be available about March, 1969.

Presently in the Amarillo Area, manpower need is satisfied for these occupations. However, developing rehabilitation services in the Amarillo Medical Center will bring about changes in the manpower need to the extent that program development for training Orthotists and Prosthetists should be considered periodically.

Informational Sources:

Herbert B. Warburton, Executive Director, American Orthotic and Prosthetic Association, Suite 130, 919 - 18thSt. N.W., Washington, D.C. 20008

Homer A. Matlock, Orthotist, Amarillo Orthopedic Applicance Co., Amarillo, Texas

Jerrell Ballar, Prothetist, Amarillo Artificial Limb.Co., Amarillo, Texas

James L. Johnson, M.D. Director, Bivins Rehabilitation Center

C. B. Sadler, M.D., Orthopedist

EMERGING
HEALTH OCCUPATIONS
INVESTIGATED

ENVIRONMENTAL HEALTH TECHNICIAN

With a concerted effort nationally for improving environmental conditions, The National Sanitation Foundation and others are inviting community colleges to develop as a part of health related programs the training of the Environmental Health Technician.

The job description, from the bureau of Health Manpower, is as follows: "The environmental health technician performs non-professional technical work under the general direction and guidance of environmental professionals. In this context, he should be able to carry out surveys, investigations, and evaluations of environmental conditions and determine compliance with or violation of public sanitation laws and regulations. He may operate water and waste water treatment facilities and supervise inspectional and control programs. He should have considerable responsibility in regard to the details and procedures followed in carrying out his duties."

Investigations of local conditions to explore the possibility of establishing this type of training in Amarillo College found the area of Public Health the most likely to use this kind of trained person. Although industrial firms, in highly industrial areas, are reported to be employing personnel to help control air pollution, water pollution, etc., there seemed to be little evidence of need for this type of manpower in private industry in the Panhandle Region.

As the area becomes industrialized, then manpower needs should be reviewed for private industrial employers of environmental technicians.

The Department of Public Health in Amarillo employs Sanitarians for meat inspection, milk inspection, food serving and processing inspection, and water and sewage inspection.

Qualifications for these positions require a baccalaureate degree with specific major course work in Biology, Chemistry, Bacteriology, Animal Husbandry, Agriculture or Dairy Science.

The only position in the local Health Department with less than baccalaureate training, under consideration in the environmental health area, is the Laboratory Assistant who only assists with spilt milk samples from the State Health Department, prepares slides for parasitiology, and prepares serological specimens. This position requires high school training only.

Since the Texas State Department of Health does not have a classification for workers who fit the description of environmental health technicians at the present time, it seems premature to consider a training program of this nautre. However, shortage of manpower may bring about revisions in state regulations that will provide for job entry with two years of training in the community college.

Informational Sources:

Dr. G. Mason Kahn, Director of Health, Amarillo Bi-City-County Health Department, Amarillo, Texas

Dr. L. P. Walter, Director, Division of Local Health Services, Texas State Department of Health, Austin, Texas

Mrs. Carrie Scanlon, Director, Public Health Nursing, Amarillo, Texas

John Reddington, The National Sanitation Foundation, P.O. Box 1468, Ann Arbor, Michigan 48106

SOCIAL WORK ASSISTANT

A short supply of professionally educated social workers in the Amarillo Area provided sufficient cause to investigate the possibility of training an Associate Degree technician in this field in the community college. Within the National Association of Social Workers and among several professional schools of social work, there has been increasing interest to identify concepts of levels of social welfare services, differential use of staff, needs of client groups, and effectiveness of various theoretical and methodological approaches to social problems. Although some colleges offer the B.A. degree in Liberal Arts with a concentration of undergraduate social welfare courses, professional training continue to be recognized only at the graduate level. In July, 1962, with the sanction of the Social Work Advisory Council, the Veterans Administration undertook a pilot study to explore the use of Social Work Assistants. Seven pilot stations were chosen for the experiment (included were two large Veterans Administration psychiatric hospitals, four Veterans Administration general hospitals, and one Veterans Administration outpatient clinic). "Qualifications for Social Work Assistants were a Baccalaureate degree from an accredited college or university preferably with a liberal arts major in sociology, psychology or economics. No experience was required. The position was established on a temporary part-time basis with the salary level at the prevailing hourly rate of a GS-5. This was approximately $4100 per annum. Employment was limited to 35 hours a week."[1]

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[1] A Study of the Use of the Social Work Assistant in the Veterans Administration, Department of Medicine and Surgery Veterans Administration, July, 1965.

The following conclusions were drawn up from this study: "A variety of assignment patterns for Assistants can prevail and effectively support the application of professional knowledge and skills if based on workload analysis, assessing needs of patient groups, clear definition of the role the Assistant can carry in meeting these, and sound administrative and practice standards and procedures."[1] The above material was presented to point out that a controlled study has shown that the Assistant in Social Work can be utilized effectively in such settings as are represented by the Veterans Administration. This position has been established as a result of the pilot program in selected Veterans Administration hospitals. It must be pointed out, however, that persons with less than a baccalaureate degree in defined liberal arts course work were not considered eligible to apply for this position. From correspondence with Ralph Segalman, Assistant Director for Social Welfare Studies, The University of Texas in Austin, came the following statement, "The key to the question of whether or not an associate of arts in social work is possible will probably revolve around the readiness of the potential employers to take on such technicians, to provide adequate remuneration and status and provide opportunity for such technicians, to continue their training in the hope of being upgraded. This probably depends on the employers in the helping professions and their readiness to accept and develop such positions in the coming years."

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[1] Ibid, p. 11

Explorations in two-year training programs in the helping professions is under consideration by the Southern Regional Education Board. The Bureau of Work Programs of the Department of Labor and the Office of Economic Opportunity have joined in a program to develop "new careers in the helping professions and other occupations." Under the latter program, people of low income are given the opportunity to bring their academic and vocational skills in combination with work experiences--some community colleges are providing the adjunct training.

In view of the present state of affairs among the professional bodies in their attempt to define the role of technician in the field of social work, it would seem premature to suggest a training program in the immediate future. It is recommended that Amarillo College keep abreast of changes in the field and seek Guidelines, if and when they are developed, for training programs at the associate of arts level. Since the Amarillo Medical Center already houses the Amarillo State Center for Human Development, the Psychiatric Pavilion of Northwest Texas Hospital, the Kilgore Children's Psychiatric Center, and the Bivins Memorial Nursing Home with other long-term and rehabilitative services planned for future development, it appears that the need for trained manpower in the social service area will increase sharply.

Informational Sources

Correspondence:

Warren, Ila Fern, ACSW, Administrative Consultant, Texas Department of Mental Health and Mental Retardation, Box S, Capitol Station.
Austin, Texas 78711

Sagalman, Ralph, ACSW, Ph.D., Assistant Director, Department of Social Welfare Studies, The University of Texas at Austin, School of Social Work, Austin, Texas 78712

Ferguson, John R., ACSW, Associate Director, Department of Social Work Practice, National Association of Social Workers, Inc., 2 Park Avenue, New York, New York, 10016

Baker, Mary R., Director, Personnel Service, Family Service Association American, 44 East 23rd St., New York, New York 10010

Interviews

Hill Fred G., Private Practitioner in Marriage and Family Counseling, 211 East 9th Street, Amarillo, Texas

Flaherty, Evelyn T., Chief, Social Work Service, Medical Social Worker, Veterans Administration Hospital, Amarillo, Texas

HEALTH OCCUPATIONS

(Six Months or Less Preparation)

Introduction

Occupations of nursing assistant, orderly, unit clerk, and respiratory technician aide may be grouped as aide positions in direct patient care. The preparation for job entry demand varying time periods. These educational programs are conducted in continuous succession on a clock hour plan for development of basic skills.

Each hospital has conducted these programs with inservice training personnel as faculty as a condition of employment of the recruited worker. The admission of only prospective employees to training programs, the forced economy of available inservice training time, and lack of teaching space contribute to the small number of persons developed for the occupations. This group of employees constitutes the largest number of turnover in workers per year and the workers receiving less than minimum wages.

Selecting one occupation as a guide for study in depth, the Nursing Assistant or Nurses' Aide - inquiry was made to three general community hospitals admitting patients in the last twelve month period: one hospital conducted twelve (12) two-week programs for "training the nurses' aide" with an average of six per class, the second hospital conducted six (6) three-week programs for "training of the nurses' aide," and the third hospital, High Plains Baptist Hospital, had not yet felt the need for a training program for daily census had not yet created the demand.

Experimental Plan

It was conceived that the Amarillo College through the office of this study, utilizing the Trade and Industrial Education Plan of the Texas Education Agency (Type C), with cooperation of all three hospitals, would conduct a three-week (120 hours) Nursing Assistant Program.

Planning of a programmed hourly instruction was detailed by a committee consisting of an inservice personnel from each of the three hospitals with the Project Study Office. This detailed plan was then presented to a larger committee of all three hospitals including the administrator, the Directors of Nursing Service and Inservice Education.[1] The program was reviewed and further amended and altered to include the variations of the responsibilities and skills for each particular hospital. Amarillo College employed two full time experienced nurses who were familiar with the hospital routine (employed regularly as School Nurses) as instructors.

Amarillo College furnished the classrooms and laboratory in the Licensed Vocational Nurse classrooms of the Vocational School. The hospitals furnished one half-time faculty member for directed clinical experience from the Inservice Training personnel and alerted the team leaders for the floor assignments or placement in directed clinical experience. The two college team-instructors separated to accompany the students who were divided into three groups of 7 and 8 for the floor assignments. During this representative three-month period, none of the general hospitals conducted a nursing assistant training program. A small tuition was charged the student, and he was required to furnish his uniform during training. The student was NOT assured employment on completion, but was given a Certificate of Completion from the Schools of Biomedical Arts and Sciences of Amarillo College.

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[1] Training the Nursing Aide, Instructor's Guide, Hospital Research and Educational Trust, 840 North Lake Shore Drive, Chicago, Illinois 60611

Cost

A saving of 11% was demonstrated in measured gross costs per graduate in comparison with cost of the hospital training programs.

Student Acceptance and Reception

Twenty-five (25) students were registered and twenty-five were graduated. The Texas Employment Office conducted the aptitude testing for acceptance. Announcement of the course was by public notice and hospital bulletin board announcements posted ten days previously. All student applicants were interviewed by the instructors. Three students from communities within commuting distance of Amarillo were registered. Follow-up interviews by the instructors of 16 of the graduates contacted demonstrated 4 who were recruited to L.V.N. and Professional Nursing; the remaining 11 had found employment. The average student grade was 87. All students expressed appreciation of the training program.

Hospital Job Situation Acceptance

No adverse criticism of the students' performances for the short experience time was expressed. Critique was invited and submitted by participating nurse team leaders having contact with the students. Review, report, and recommendations for revision of the program plan were made.[1]

Major Recommended Modifications

Extend the course to four weeks (to allow more directed clinical experience). Admission of 16 and 17 year olds to the program (student age-range was 18 to 57 years). Use of a textbook (material was prepared by the instructors and duplicated by the college). Design our aptitude test (done 7/24/68).

Recommended General Plan

The same originally designated committee for preparation of the programed instruction designed a similar plan for the orderly and for the unit clerk training.[2] Time planned for orderly training - 5 weeks (2 weeks beyond the nursing assistant instruction to allow more instruction in body mechanics). Time planned for unit clerk training - 6 weeks.

Amarillo College was advised to arrange for a succession of the courses to be taught by similar permanently employed personnel for four (4) nursing assistant programs per year, three (3) orderly programs, and two (2) unit clerk programs. Further planning and development for similar levels of skills in Hospital Food Occupations, Housekeeping, and Hospital Administration recommended.

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[1] Complete Report of Experimental Nursing Assistant Program by the Amarillo College and three General Hospitals is on file in the Study Office of the School of Biomedical Arts and Sciences.

[2] American Nurses' Association Statement of Auxiliary Personnel in Nursing Service, April, 1962, American Nurses' Association, 10 Columbus Circle, New York 19, N. Y.

Summary and Observations from the Study Office

1. Since the number of persons served and job numbers are larger in comparison to those occupations in the technologies described elsewhere in this report, the provision of health occupational education in this area would be of wider community service.
2. That coordination be made with the Health Occupations Division of Secondary Vocational Education to allow participation of the 17 and 18 year old in the program, thus interesting more people in Health Occupations.
3. That the persons not seeking employment be admitted to learn the rudiments of nursing care in order that they may utilize the skills in the nursing of family members in the home.
4. On being admitted as a patient, a greater appreciation and understanding of the necessity and meaning of hospital care and procedures encountered would be gained-when they or members of their families find it necessary to be admitted for hospital care as patients.
5. That planning of "short term" health occupation educational programs be arranged with a permanent faculty. Determine schedule of programs according to a review for demonstrated needs from a review of the past three years Hospital Training Programs.

Advisory Commitee

Mrs. Eutha Mae Morris, R.N., Inservice Training, Northwest Texas Hospital
Amarillo, Texas

Mrs. Bertha Neal, Inservice Training, High Plains Baptist Hospital, Amarillo, Texas

Mrs. Betty Clark, R.N., Inservice Training, St. Anthony's Hospital, Amarillo, Texas (Coordinated by Study Office)

Informational Sources

American Hospital Association, 840 North Lake Shore Drive, Chicago, Ill. 60611

Hospital Research and Educational Trust, 840 North Lake Shore Drive, Chicago, Illinois 60611

Manpower for Health Publication, 1966-67, (loose-leaf), Purdue University School of Technology, Lafayette, Indiana, Department of Labor.

Resource Persons

Mrs. Margaret Canney, R.N., M.A., Director Nursing Service, Northwest Texas Hospital, Amarillo, Texas

Mrs. Eunice King, R.N., M.A., Administrator for Nursing and Director, Northwest Texas Hospital School of Nursing, Amarillo, Texas

Mr. F.S. Walters, M.A., Administrator, Northwest Texas Hospital, Amarillo, Texas

Sister M. Thomasine, R.N., M.A., Administrator, St. Anthony's Hospital, Amarillo, Texas

Elissa Bishop, R.N., B.A., Superintendent of Nursing, High Plains Baptist Hospital, Amarillo, Texas

Mrs. Dorothy Blumer, Assistant Administrator, St. Anthony's Hospital, Amarillo, Texas

PROGRAMS INVESTIGATED
FOR

POSSIBLE FUTURE IMPLEMENTATION

REVIEW OF OBJECTIVES AS STATED IN PROPOSAL

Other than as discussed in the remaining paragraphs, the general objectives of the project were accomplished to a degree limited only by time and the local situation.

Planning and procedure will be modified as development is pursued. The Steering Committee and Advisory Committees of this project are continuing in a similar capacity to serve the Board of Regents of Amarillo College and the Health Industry of Amarillo and the geographical area. Changes and modifications in each health occupation occur rapidly. Each health occupational training program engaged in by a school, to be effective, must cooperate with and utilize the local health industry situation.

Objectives 10, 11, and 14 as related to the schematic form of plans for laboratories, classrooms, supporting areas, and equipment to be housed in a projected building or buildings on the Amarillo Medical Center site, and the estimated financial requirements for construction of the same were not accomplished.

Completion of the State School for Human Development, Bivins Memorial Nursing Home, Bivins Center for Rehabilitation (High Plains Baptist Hospital), and the out-patient facilities for the District Hospital (Northwest Texas Hospital), was phased from early 1968 to mid-1969. The Steering Committee recommended that the completion of these specified objectives in planning be scheduled for 1968-69 action in cooperation with the Health

Planning Committee of the Potter-Randall Citizens Committee as the emerging facilities for health occupational training are completed. These are presented in the paper as delayed implementation for health occupational training programs as contrasted with programs for immediate implementation. Such a report will be mailed to the Occupational Research Office, Texas Education Agency in the summer of 1969.

A SPECIAL RECOMMENDATION

Wages for salaried personnel in the health field must be comparable to those paid for jobs in the community with comparable skill and training. Wage and hour laws and other protective legislation should be amended to include health personnel wherever their place of employment.

Although wages in the health field have increased substantially during the past ten years, they are still generally below those paid for comparable skill and training elsewhere in the community. Student recruitment into training programs and subsequent retention of trained personnel in the health industry will be largely dependent upon adequate salaries and favorable working conditions would include systems of promotion geared to significant increases in wages and fringe benefits. Opportunities for advancement and growth within the health industry will help alleviate the problem of losing an unusually large number of workers each year. Some of the losses can be attributed to a work force made up of about 85% women; however, manpower specialists believe other factors contribute to this loss of workers. In particular, those mentioned above; opportunities for advancement and growth, adequate salaries and favorable working conditions. Since the majority of health workers are women, educational institutions offering training programs should provide for educational patterns that would allow women to be trained while caring for families and programs for retraining and upgrading those who must leave a job for a time to return to the field later. Employing agencies must be cognizant of needs to establish work-day patterns that will acknowledge family needs.

SAMPLE JOB DESCRIPTIONS

"DEAN"--CONSULTING DIRECTOR

Responsible and accountable for the overall operation of the School of Biomedical Arts & Sciences.

Represent the School of Biomedical Arts and Sciences to the President and Board of Regents of Amarillo College:

1) Establishing all School policies within the overall policy direction and censor of the Administration of the College.

2) Presenting and alerting the problems of the School to the Administrative Council.

3) Recommend and presenting faculty nomination, curriculum planning, equipment and supplies and selection (budgeting) for advisement of the Administrative Council.

4) Establishing and coordinating all interdepartmental and cooperative use of faculties and instruction with

   Dean of Academic--Division and Department Heads.
   Dean of Technical--Vocational Division and Department Heads.

Expediting and maintaining all inter-relations and agreements with the Directors and Administrators of the Health Facilities, Health Industry Employers and other Directors of Health Occupation Education and Training. Such agreements, by formal or mutual understanding to be confirmed by the College Administration.

Supervise and maintain interaction and decisions with the Health Professional Bodies, Accrediting Agencies of the industry, both local, state and national, with confirmation of the college administration.

Accept the responsibility to the T.E.A., Health Occupations Division, and if so required, the Coordinating Board of Texas Higher Education. This same relationship must be fostered with the health occupations supervisors, in secondary education.

Executive officer of the Steering Committee of the School of Biomedical Arts and Sciences. Relating their recommendations to the College Administration.

Assuming responsibility with the professional Director or Chairman of the Advisory Committee for each occupation or Technology, (particularly, those programs that require a professional person to serve in this capacity; i.e. pathologist to medical laboratory technician program).

Supervision and Coordination of the needs, requests and recommendations of the Director and Faculty of the School of Biomedical Arts and Sciences. Chair the School's regularly scheduled personnel/faculty planning meetings.

Present at six month or other determined intervals written recommended modifications and re-adjustments to the College Administrative Council regarding the following stated topics and others that might arise:

1) General policy.
2) Curriculum, scheduling--planning changes.
3) Faculty Assignments.

"DIRECTOR"--COORDINATOR

Expedition of the Operation of the School of Biomedical Arts and Sciences. Supervision and Direct Counseling with all Students. Constant surveillance of all job entry descriptions (performance and educational needs for each health occupation).

Maintain the Permanent Central Office of the School:

1) Assist "Dean" in assimilating data and information for Administrative Council advice and decision; maintain records.

2) Attend all Steering Committee and Advisory Committee Meetings

3) Make immediate decision on problems in each health occupation program that arise from the monitoring of each health occupation program.

    a) Alert the Dean of those problems that need administrative consultation.

    b) Serve as contact person for the faculty for each health occupational program

    c) Assist the faculty-coordinators of each program in scheduling health facility directed practice hours.

d) Maintain a direct liason with the supervisors in the health facilities regarding not only scheduling of student activity in health facility, but also performance and activity behavior of student while in the facility.

e) Filling and expediting requests for supplies or equipment that may not have been foreseen by the faculty-coordinators.

f) Executive-Secretary of the regularly scheduled Personnel Faculty Committees of the School of Biomedical Arts and Sciences.

g) Coordinator of shared duties of faculty-coordinators of each health occupation program.

Direct and perform All Student Counseling:

1) Review at six week intervals activity and performance of each student in all of the programs with the faculty-coordinators. Schedule Appointments with each student at that time if need is demonstrated after consultation with faculty coordinator.

2) Chair the committee on student admissions.

3) Chair the committee on Recruitment and Placement. Direct Recruitment and Placement. May delegate specific assignments that may arise to faculty coordinator and cooperate with all other Recruitment and Placement Programs of the College.

Chair the committee on Health Occupation Program Planning or Long Range Planning Committee:

-- Maintain and review at annual interval job description of each health occupation.

-- Maintain files of new Health Occupation Programs for the School of Biomedical Arts and Sciences.

INSTRUCTOR - COORDINATOR
Radiological Technology Program

Conduct the lectures, laboratories and demonstrations of the Technological curriculum.

Prepare course outlines and material under director of the Radiologist of the program and the Advisory Committee, which he chairs, to fulfill the stipulations of the appropriate Registry and the educational requirements of the Board of Schools of Medical Technology.

Design and maintain appropriate student records including grades, experiences and critiques in cooperation with Director Coordinator of the School of B.A. and S.

Supervise and maintain the scheduling and the critique of the Directed practice or Clinical experience of the student in cooperation with the Chief Technologist of each Health Facility cooperating.

Follow carefully the progress of each student in the Radiological Technology Program. Every 6 weeks review the progress of each student with the Director-Coordinator of the School of B.A. and S. and enlist his help in student counseling when necessary.

Recommend acquistion of, check and maintain, all equipment and materials used in the conduction of instruction in the Radiological Technology program. Cooperate in the use of shared facilities and equipment with other education programs of Amarillo College.

Accept teaching assignments when necessary in other health occupational programs approved by the Faculty/Personnel Committee of the School of B.A. and S. insofar as teaching load will allow.

Conduct constant research and development of curriculum and the most adequate utilization of student's time. Recommend changes and modification through the advisory committee.

If work load permits, accept with approval of the Dean and Director, requests for consultation or assistance to the health facilities of the Amarillo area as part of the School and the College in carrying out its community services purposes. This is within the policy as stated in the Faculty Handbook of Amarillo College, 1966, or as amended. All other activities while in the employment of Amarillo College shall follow the standards of policy and practices of this handbook.

Participate in Prospective Student Information Programs and Recruitment of the School of B.A. and S.

Committee Services

Advisory Committee Radiologist Technology Program

Faculty/Personnel

INSTRUCTOR - COORDINATOR
Medical Record Science Program

Conduct the lectures, laboratories and demonstrations of the Technological curriculum.

Prepare course outlines and material under the direction of the Registered Record Librarian and the Advisory Committee, which he chairs, to fulfill the stipulations of the appropriate Registry and the educational requirements of the Board of Schools of Medical Technology.

Design and maintain appropriate student records including grades, experiences and critiques in cooperation with Director - Coordinator of the School of B. A. and S.

Supervise and maintain the scheduling and the critique of the Directed practice or Clinical experience of the student in cooperation with the Chief Technologist or each Health Facility cooperating.

Follow carefully the progress of each student in the Medical Record Science Program. Every 6 weeks review the progress of each student with the Director-Coordinator of the School of B. A. and S. and enlist help in student counseling when necessary.

Recommend acquisition of, check and maintain, all equipment and materials used in the conduction of instruction in the Medical Record Science program. Cooperate in the use of shared facilities and equipment with other education programs of Amarillo College.

Accept teaching assignments when necessary in other health occupational programs approved by the Faculty/Personnel Committee of the School of B.A. and S. insofar as teaching load will allow.

Conduct constant research and development of curriculum and the most adequate utilization of student's time. Recommend changes and modification through the advisory committee.

If work load permits, accept with approval of the Dean and Director requests for consultation or assistance to the health facilities of the Amarillo area as a part of the School and the College in carrying out its community services purposes. This is within the policy as stated in the Faculty Handbook of Amarillo College, 1966, or as amended. All other activities while in the employment of Amarillo College shall follow the standards of policy and practices of this handbook.

Participate in Prospective Student Information Programs and Recruitment of the School of B. A. and S.

Committee Services

Advisory Committee Medical Record Science Program
Faculty/Personnel

INSTRUCTOR - COORDINATOR
Medical Laboratory Technician Program

Conduct the lectures, laboratories and demonstrations of the Technological curriculum.

Prepare course outlines and material under direction of the Clinical Pathologist-Director of the program and the Advisory Committee, which he chairs, to fulfill the stipulations of the appropriate Registry and the educational requirements of the Board of Schools of Medical Technology.

Design and maintain appropriate student records including grades, experiences and critiques in cooperation with Director Coordinator of the School of B.A. and S.

Supervise and maintain the scheduling and the critique of the Directed practice or Clinical experience of the student in cooperation with the Chief Technologist of each Health Facility cooperating.

Follow carefully the progress of each student in the medical laboratory technician program. Every 6 weeks review the progress of each student with the Director Coordinator of the School of B.A. and S. and enlist the help in student couseling when necessary.

Recommend acquistion of, check and maintain, all equipment and materials used in the conduction of instruction in the medical laboratory technician program. Cooperate in the use of shared facilities and equipment with other education programs of Amarillo College.

Accept teaching assignments when necessary in other health occupational programs approved by the Faculty/Personnel Committee of the School of B.A. and S. insofar as teaching load will allow.

Conduct constant research and development of curriculum and the most adequate utilization of student's time. Recommend changes and modification through the advisory committee.

If work load permits, accept with approval of the Dean and Director, requests for consultation or assistance to the health facilities of the Amarillo area as a part of the School and the College in carrying out its community services purposes. This is within the policy as stated in the Faculty Handbook of Amarillo College, 1966 or as amended. All other activities while in the employment of Amarillo College shall follow the standards of policy and practices of this handbook.

Participate in Prospective Student Information Programs and Recruitment of the School of B. A. and S.

Committee Services

Advisory Committee Medical Laboratory Technician Program
Faculty/Personnel

MINIMAL[1] QUALIFICATIONS FOR TECHNICAL HEALTH OCCUPATION FACULTY STAFF AND INSTRUCTORS

"Consulting Dean" - Hospital Administrator, M.A. in Hospital Administration.

Director-Coordinator - M.A. in Hospital Administration or Public Health Administration

Experience in Education

Teacher Coordinators:

Associate Degree Nursing - R.N., M.A. in Nursing Education

Medical Laboratory Program - M.T., ASCP, B.A.
Experience in Education

Medical Record Technician - B.A. in Medical Record Science, R.R.L.

Medical Office Assisting - Certified Medical Assistant

Dental Assisting - Certified Dental Assistant

Mental Health Associate - M.A. in Clinical Psychology

Inhalation Therapy - Registered Inhalation Therapist, A.D.

Physical Therapy Assisting - Registered Inhalation Therapist, B.A.

Occupational Therapy Assisting - Registered Occupation Therapist, B.A.

Ward Service Manager - B.B.A.
Hospital Administrative Experience

Biomedical Equipment Technician - B.A. in Biomedical Engineering

Opticianry - Certification by American Board of Opticianry A.D. in Opticianry

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[1] The term minimal used as statement of an essential qualification. A statement of optimal qualifications demands further study by this office and others interested in Health occupation education.

Orthotics and Prostehetics - Certification by the American Board of Orthotics and Prosthetics

Food Service Manager - Adequate Experience in Food Service Management

Vocational - Short-Term Instructions

Demands an R.N. for many of the occupations in nursing arts. For those not in nursing arts, recognized skill.

Consulting Directors of Programs - Professionals at Doctorate or Masters' levels in the Health Specialties represented.

AGREEMENT

____________________ TECHNOLOGY PROGRAM

THIS AGREEMENT between Amarillo College School of Biomedical Arts and Sciences, hereinafter referred to as the College, and ____________________ (name of clinical ____________________, hereinafter referred to as the Hospital, facility)

WITHNESSITH:

WHEREAS, the College desires to enter into a cooperative arrangement with the Hospital for the purpose of providing adequate clinical experience for the students of said education program in ____________________ Technology; and

WHEREAS, the Hospital believes the value of the work of such students will add to its operations,

NOW, THEREFORE, in consideration of the mutual convenants and agreements herein contained, the parties hereto agree as follows:

1. The College assumes the responsibility of preparing the student ____________________ Technicians in the various phases of ______________________________ (the technology science) prior to their acceptance in the Hospital for training in a specific area.

2. The College will provide a faculty supervisor who will visit the Hospital periodically during the training period of each student, at the convenience of the Hospital ________________ Departments.

3. The Hospital reserves the right, in its absolute discretion, to refuse its facilities and services to any student who does not meet the professional or other requirements of the Hospital or any appropriate authority controlling and directing said Hospital.

4. The College will instruct its students and faculty to respect the confidential nature of all information which they may obtain from patients and records of the Hospital.

5. The Hospital, insofar as it does not interfere with the normal functioning of the ______________________ Departments, agrees to provide experience for the students in the following areas:

(Listed Summary of technology experiences)

6. The Hospital agrees to assist the program by providing through its supervisory personnel regular evaluation of said students, at intervals to be agreed upon by the Hospital and the College, the evaluation form to be provided by the College.

7. The College agrees the students will be subject to all rules and regulations pertaining to regular employees of the Hospital.

8. This agreement shall become effective immediately upon execution by the parties and will continue in full force and effect until terminated as hereinafter provided. This agreement may be modified at any time upon the written request of either party with the consent of the other party. This agreement may be terminated at any time by mutual consent of the parties, or it may be terminated by either party upon written notice to the other party as provided in Paragraph "10" of this agreement. Such non-consensual termination shall become effective six months after proper notice. In the event of non-consensual termination of this agreement by either party, such termination shall not become effective until the students involved in the cooperative program shall have an opportunity to complete the full experience so long as the cause for termination does not fall within the boundaries of Paragraphs "3" and "7" above, despite the fact that this period required for program completion may exceed the six-month period established in the paragraph.

9. The parties hereto recognize that, in the performance of this contract, the greatest benefits will be derived by promoting the interests of both parties, and each party does, therefore, enter into this contract with the intention of loyally cooperating with the other in carrying out the terms of this contract and each party agrees to interpret its provisions, insofar as it may legally do so, in such manner as will best promote the interests of both and render the highest service to the patients and the public.

10. All notices to parties hereunder must be in writing, signed by the party giving it, and shall be served either personally or by mail addressed as follows:

TO THE COLLEGE:

Director, School of Biomedical Arts and Sciences
Amarillo College
P. O. Box 447
Amarillo, Texas 79105

TO THE HOSPITAL:

10. continued

or to such other addresses as may be hereinafter designated by notice. All notices become effective only when received by the addressee.

11. This agreement constitutes the entire agreement of the parties hereto and all previous communications between the parties, whether written or oral, with reference to the subject matter of this contract, are hereby susperseded.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first above written.

Director, School of Biomedical Arts and Sciences
(For the Board of Regents, Amarillo College)

Hospital Administrator
(For the Governing Body of the Hospital)

MEDICAL RECORDS LABORATORY EQUIPMENT

10	Teacher Table @45.00	$ 450.00
8	L units for typing & Transcription @75.00	600.00
8	Electric typewriters @375.00	3,000.00
18	Posture chairs @35.00	630.00
4	5 Drawer Legal file 215 CP Locks @80.00	320.00
3	Sections open shelf file @135.00	405.00
3	3 x 5 Double card file 8 Drawer 214-PO8C35 @135.00	405.00
1	Double 3x5 Rol-o-Dex 4000 capacity 3504 T @84.00	84.00
6	3x5 Double card files @6.00	36.00
2	Rotary calculators--8 col @800.00	1,600.00
8	Transcribers--Rental 12 month @144.00	1,152.00
	Library	45.00
	Teaching supplies (Belts, chart material, statistical printed forms, etc)	370.00
	Miscellaneous supplies	112.00
	TOTAL	$ 9,209.00
INSTRUCTION:		
	Teacher-Coordinator	10,000.00
GRAND TOTAL.		$19,209.00

MEDICAL ASSISTING: CLINICAL AND ADMINISTRATIVE

EQUIPMENT:

1	2K63 Examination Table	$ 612.00
1	Stool 18K7	54.00
1	20K55 Waste Receiver	77.00
1	8M Exam Light	165.00
1	745 Wall Transformer	66.00
1	216 Otoscope	23.00
1	115 Opthalmoscope	46.00
1 Set 6	Sundry Jars	12.50
1	Mayo Instrument Table	46.50
1	Costumer Stainless Steel	35.00
1	402 Physician Scale W/Measure Rod	64.00
1	999 Autoclave	645.00
1	Blood Pressure Apparatus	49.50
1	Comb Stethoscope	8.00
1	Delee Hillis Stethoscope	16.00
1	Transilluminator	7.50
1	Percussion Hammer	2.50
1	Pocket Light	7.50
1 pr.	5½" Cud Kelly Hemostat	7.40
1 pr.	5" Cud Mosquito Forceps	7.40
1 pr.	5" Str. Mosquito Forceps	7.50

1	6" Mayo Hegar Needle Holder	9.00
1	Olsen Hegar Scissor/Needle Holder	12.00
3 pr.	3½" Towel Clamps	7.00
1 pr.	Sponge Forceps	9.40
2 pr.	Allis Tissue Forceps 4 x 5	9.00
1	#3 B P Handle	2.40
1	#7BP Handle	2.40
1 doz.	#11 Sterile Knife Blades	2.10
1 doz.	#10 Sterile Knife Blades	2.10
1	6" Probe	1.00
1 pr.	5½" S & B Operating Scissor	5.40
1 pr.	5" Stitch Scissor	6.40
1 pr.	Iris Scissor	6.00
2 pr.	5½" Lister Bandage Scissor	3.00
2 pr.	5" Thumb Forceps	2.60
1 pr.	5" Splinter Forceps	4.80
1	Cast Cutter Electric	95.00
1	Cast Spreader	19.50
1	Finger Nail Drill	6.00
1	Finger Ring Cutter	12.50
1	Tourniquet Velcro	2.50
1	Kidde Dry Ice Apparatus	60.00
1	Eye Chart	3.00

1	Dix Needle & Spud	5.40
1	Binocular Loupe	12.00
1	Pomeroy Ear Syringe	8.00
1	Tuning Fork	5.20
1 pr.	Angular Ear Forceps	4.40
2	Blunt Ear Curettes #1	2.40
2	Blunt Ear Curettes #2	2.40
1	Nasal Speculum	10.60
1	460 Headlight	40.00
1	Med. Graves Speculum	5.95
1	Small Graves Speculum	5.95
1	Large Graves Speculum	5.95
1	Uterine Dressing Forcep	12.00
1	Tenaculum, Uterine	14.20
1	Pelvimeter, Collyer	12.00
1	Rectal Speculum	22.60
1	Anoscope w/light Carrier	22.00
1	308 Sigmoidoscope	38.00
1	725A Cord	7.25
1	Transformer	15.00
1	185 McKesson BMR Machine	440.00
1	UT420 Ultra Sound Machine Burdick	430.00
1	MW200 Diathermy Burdick	985.00

1	EKIV EKG Machine Burdick	790.00
1	EKS-37 Stand Burdick	75.00
1	8K-31 Pediatric Table Hamilton	536.00
1	22K1 Waste Receiver	31.00
1	F7F Proctological Exam Table Ritter	2,065.00
1	Nebulizer-Atomizer	8.50
1	Interval Timer	10.95

SUPPLIES:

1 bx	Cast Padding	4.80
1 doz	Assorted Finger Splints	4.80
2	Med Walking Heels	2.00
2	LQ Walking Heels	2.00
6	Med Male Elastic Rib Belts 3.25@	19.50
6	Large Male Elastic Rib Belts 3.25@	19.50
6	Med. Female Elastic Belts 3.50@	21.00
6	Small Female Elastic Rib Belts 3.50@	21.00
1 Bag	Med Cotton Balls	5.75
1 btl	½" NuGauze Strips	.75
1 Rl	2" Orthopedic Stockinettes	3.65
1 Rl	3" Orthopedic Stockinettes	5.25
1 bx	3 x 15 Splints, Plaster	3.25
1 cs	Disp Bellview Towels	8.11
1 gal	Phisohex	10.05

1 doz	Urine Specimen Bottles	3,60
1	Physician Daily Record	16.00
1	Tape Measure	3.45
1 tube	58 5 oz. Lily Cups	1.00
6	Exam Gowns 3.00@	18.00
1 cs.	18" Table Paper	20.00
1 pkg	SB-6-50 Waste Liners	4.00
1 rl	1" Zonas Adhesive Tape	3.39
1 rl	2" Zonas Adhesive Tape	3.39
1 rl	2" Dermicel Tape	4.00
1 cs	Alcohol Rubbing	4.00
1 btl	Aerosol Merthiolate	2.25
1 btl	Instrument Germicide	5.00
100	Med. Disposable Gloves Lite Touch 5.95@	5.95
1 Gro	Med Finger Cots 1.25@	1.25
1 bx 100	Disp Tuberculin Syringes W/26 x 3/8 12.00@	12.00
1 bx 100	802L/DN 2½cc w/25 x 5/8 Disp Needle 8.40@	8.40
1 bx 100	80L/DN 2½ cc w/23 x 1 Disp. Needle 8.40 @	8.40
1 bx 100	805L/DN 5 cc w/20 x 1 Disp. Needle 15.30@	15.30
1 bx 100	810 L/DN 10cc Disp Syringe Only 15.80@	15.80
1 bx 100	810 L/DN 10cc Disp Syringe Only 15.80 @	15.80
1	Forceps Jar SS 6.50@	6.50
6	Oral Thermometer .75@	4.50
6	Rectal Thermometer .75@	4.50

2	Emesis Basin 2.64@	5.28
1 bx.	Jr. Tongue Depressor	1.90
1 bx.	Sr. Tongue Depressor	2.05
1 bx.	6" Wood Applicators	.90
1 bx.	6" Cotton Buds	2.40
1 doz.	684-G 4-0 Silk Suture	7.68
1 doz.	683-G 3-0 Silk Suture	7.68
1 doz.	661-G 5-0 Nylon Cuticular	7.68
1 bx	1 x 3 Plastic Band Aid	1.25
1 bx	3/4 x 3 Plastic Band Aid	1.04
1 bx	7/8" Plastic Spot Band Aid	.97
1 pkg	4 x 4 - 8 ply Gauze Sponges	2.38
1 pkg	2 x 2 --12 ply Gauze Sponges	1.02
1 pkg	3 x 3 --Sterile Gauze Sponges	2.35
1 rl	2" Improved Gauze Bandage	2.80
1 doz	5 oz. KY Jelly	3.51
1 doz	3" Plaster Bandage	3.36
1 doz	4" Plaster Bandage	4.79
1 doz	3" Ace Bandage	6.97
1 doz	2" Ace Bandage	5.10
1	Adhesive Tape Dispenser	10.50
1 pkg	2"Kling Bandage	1.85
1 pkg	3" Kling Bandage	2.65

1 pkg	4" Kling Bandage	3.35
1 doz	3 x 18 Vaseline Gauze	4.16
1 rl	Lee Cotton	.95
2	Thermometer Sterilizers 4.50@	9.00
1 can	Aerosol Deodorant	1.30

TOTAL:			
EQUIPMENT			$ 7,882.75
SUPPLIES:	Lab Supplies	$406.99	
	Library	200.00	
	Teaching Supplies	150.00	756.99
Instruction:	Teacher--Coordinator	$8,000	
	Consulting Director	600	8,600.00
			$17,239.74

DENTAL ASSISTING

EQUIPMENT:

1	Air Compressor (McKesson)	$ 745.00
1	Novmatic, (McKesson)	850.00
2	Crescent Wig-L-Bur Amalgamators and Access.	150.00
2	Weber AT 200 High Speed Hand Pieces	500.00
2	Harvey Sterilizer	630.00
1	Autoclave	
1	Dry Heat Sterilizer	265.00
2	High Velocity Suction Units and aspirator tips	350.00
2	Cabinets--Viking	946.00
2	Contra angles	75.00
	Contra angles minature, belt, driven	95.70
2	Straight Hand Pieces	110.00
2	Dental Chairs Weber Power Chairs	3,900.00
2	Hand Piece Sterilizers	150.00
1	Hydrocolloid Conditioner--Trays--Tubing	650.00
2	Operating Lights	550.00
2	Operating Stools (Lo Boy)	210.00
2	Assistants Operating Stools	175.00
2	Prophylaxis Angles & Cups	49.90
2	Vitalometers--Parkell (Burton)	270.00
2	Sterilizing Syrings	35.00
2	Weber Unettes	4,310.00

2	X-Ray View Boxes	95.00
1	X-Ray Unit Ultron 90 KVP Raydex	2,790.00
1	X-Ray Unit 65 KVP	2,395.00
2	Ultra Sun 880	1,070.00
2	Rubber Floor mats	58.00
2	Weber, unit r70	4,310.00
2	Waste receptacles	50.00
2	Ultrasoni 880 for prophylaxis	1,070.00
2	Toril Model E-7 Oral evacuators	601.00
2	Articulators Hanau 96 H_2	180.00
1	Coe Steel Wall Cabinate #490	59.00
2	Coe #470 Economy Laboratory bench	312.00
2	Coe 721 Bench Lamps	79.00
1	Coe #523 Plaster trap	89.50
1	Coe #666 Plaster bin	35.00
2	Coe C17 Technicians Chairs	
1	Coe Technicians Casting and plaster	
1	Bench 025-43	871.00
1	Handy sandy	81.00
1	Thermotrol D-3	325.00
1	Jelenko L-FA Model C Furnace	209.00
1	Bench press	35.00
10	Stainless Trays 12" x 18"	55.00

10	Handpiece--angle dental hexagonal sleeve 26.95@	270.00
5	Handpiece--straight dental hexagonal nose 54.95@	275.00
2	Handpiece--and air turbine unit dental ultra high speed 110 Volt 60 Cyc AC 650.00@	1,300.00
2	Ultrasonic Prophylaxis Unit Dental Portable 110 Volt 180 Watts 60 Cycle AC Input 35 Volt 25 Kilocycle AC Output (ADD) 700.00@	1,400.00
2	Screen X-Ray Protective Mobile 82.50@	165.00
1	Tank Master X-Ray Film Processing Refrigerated Single Compartment 110 Volt 60 Cycle AC 259.00@	259.00
1	Cabinet--Surgical Instrument Corrosion Resisting Steel 16 by 36 by 72 inches	255.00
1	Cabinet--Surgical Instrument and Dressing Corrosion Resisting steel 16 bb 30 by 60 inches	230.00
1	Stand Surgical Instrument Adjustable Corrosion Resisting Steel 54.00@	54.00
1	Table Surgical Instrument and Surgical Dressing Corrosion Resisting Steel 33 by 18 by 32 inches	125.00
1	Sterilizer Surgical Instrument Dry Heat Type Electrically heated corrosion resisting metal 11½ by 6½ by 5 inches 110 volt 60 cycle AC (Add) 179.50@	179.50
1	File Visible Index Cabinet Steel Color and Finish A/A Removable hanger or pocket type slides 1 cord or 1 pocekt wide with or W/O sliding tray rest card sizes 5x8 cap 60 to 90 cards	12.50
4	Waste Receptacle Step-on Type Corrosion Resisting Steel 3 Gal	60.00
6	Applicator Wood Cotton Tipped End 1/12 by 6 inches 100S 1.85@	12.00
5	Depressor Tongue Wood 100S 1.25@	6.00

2	Forceps Dressing Straight 10 Inch 6.95@	14.00
2	Forceps Sterilizer 7 inch 1.95@	4.00
8	Blade Surgical Knives Detachable assorted	20.00
4	Handle Surgical Knife Detachable Blade No 3	12.00
2	Scissors Bandage Angular Lister 5 1/2 inch 8.25@	16.50
2	Scissors Iris Straight 4¼ inch 6.25@	12.50
2	Syringe Cartridge Thumb Rest Crutch Handle 9.75@	20.00
6	Needle Hypodermic Cartridge Types, Assorted	300.00
4	Syringe Cartridge Aspirating Thumb Ring Handle 5.75@	23.00
4	Blade Surgical Knife Detachable, Assorted	10.00
8	Needle Hypodermic Cartridge Type Disposable, Assor.	400.00
2	Syringe Luer Needle Lock 3 CC	2.25
1	Suture Nonabsorable Surgical Silk Braided Size 000 Single Armed 125 (ADD) per/100 yrds 7.25@	7.25
4	Syringe Cartridge Aspirating Thumb Ring Handle	48.00
4	File Set Pulp Canal Dental, Assorted	14.00
2	Plugger Plastic Filing Dental Gregg No. 1	5.00
2	Bur Dental Trimming	9.60
2	Disk Abrasive/Silicon Carbide Coarse Grit, Asst. per/500 $3.95@	7.90
3	Disk Abrasive Flint Coarse Grit per/500 $3.95@	11.85
2	Disk Abrasive Carbide Med. Grit	7.90
1	Disk Abrasive Carbide Fine Grit	3.95
2	Disk Abrasive Carbide Garnet Fine Grit	7.90

2	Disk Abrasive Garnet Medium Grit	7.90
1	Wheel Abrasive Silicon Carbide Straight Handpiece rounded edges 12S per/12 2.00@	2.00
1	Knife Compound dental with detachable blade	2.50
1	Guide Mold Dental Myerson	37.50
1	Disk Set Abrasive Dental Handpiece paper assorted with stand set of 525 3.95@ per/500	3.95
1	Rubber Straight Abrasive--Wheel Set--Handpiece Set of 100 per/12 1.95@	1.95
3	Burr Dental Excavating Angel Handpiece Tungsten Carbide Asst. per/12 13.80@	41.40
5	Burr Dental Excavating Angel Handpiece Tungsten Carbides	69.00
1	Heat Reduction Apparatus Dental Operating Unit Patient Operated 3.25@	3.25
4	Disk Abrasive Diamond Straight Handpiece Cones	13.00
7	Wheel Abrasive Diamond Angle Handpieces	38.50
24	Wheel Abrasive Diamond Angle Handpiece Tapered Cylinder Assorted 5.50@	132.00
1	Forceps Dressing Meriam 6 inch 6.95@	6.95
1	Burr Dental Finishing Angle Handpiece Steel 6S per/6 $3.00@	3.00
1	Abrasive Paste Dental Silicon Carbide 3 oz.	2.75
2	Amalgamator electric dental 110 Volt 60 cycle AC 82.00@	164.00
1	Arbor and Band Set Dental Handpiece 4.50@ per/100 3.50@	8.00
1	Face Bow Articulator Dental	47.55

6	Handle Dental Suction Apparatus Tip 6.00@	36.00
6	Tip Dental Suction Apparatus Coupland No 2 1.75@	10.50
1	Band Abrasive Silicon Carbide Grit No 80 100S 1.75@	1.75
1	Band Set Copper Dental Assorted 100S 7.95@	7.95
1	Band Ligature Dental Rubber Large 175S	1.25
1	Band Ligature Dental Rubber Small 225S	1.25
10	Bowl Plaster of Paris Mixing Rubber large 2.25@	23.00
10	Bowl Plaster of Paris Mixing Rubber Medium 1.50@	15.00
3	Broach Root Canal Barbed Coarse 12S per/12 1.75@	5.25
2	Brush Bristle Dental Handpiece Mandrel Mounted 3/4 inch 6S 1.00@	2.00
4	Brush Scratch Dental 1.00@	4.00
14	Bur Dental Excavating Angle Handpieces	193.20
11	Bur Dental Excavating Angle Handpieces 13.80 per/12	151.80
2	Bur Dental Surgery Angle Handpiece Steel Henahan	13.20
1	Bur Denture Trimming Straight Handpiece Steel No. 1 6S 6.60 per/12	6.60
4	Bur Dental Finishing Angle Handpieces Steel 6.00 per/12	24.00
2	Bur Dental Finishing Straight Handpieces Steel 6.00 per/12	12.00
4	Burnisher Dental Assorted 3.00@	12.00
8	Carrier Amalgam Ivory Type 6.25@	50.00
8	Carver Dental Frahms 5.00@	40.00
6	Carver Dental Hollenbacks 5.00@	30.00
2	Carver Dental Roach 5.00@	10.00

10	Cement Copper and Zinc Phosphates Dental Red 1 oz. 5.00@	10.00
12	Chisel Dental Assorted	25.20
2	Clamp Rubber Dam Dental Cervix Multiple Jaw 1.25@	2.50
4	Clamp Rubber Dam Dental 1.25@	5.00
22	Clamp Rubber Dam Dental Assorted .125@	27.50
5	Cloth Squeeze Dental 100S 1.10@	5.50
4	Matrix Crown Dental Plastic Cuspid Large 12S 1.50@	6.00
6	Cover Dental Bracket Table 500S	30.00
6	Cup Set Polihsing Dental Handpiece Rubber Set of 12 1.60 per/12	9.00
14	Currette Alveolar Molt Asst. 3.45@	49.00
1	Disk Abrasive Diamond 7/8 in dia	2.95
1	Disk Abrasive Alumnium Oxide 7/8 in dia 125	2.95
1	Wheel Abrasive Rubber Sulci-Wheel Shape 0.375 in dia 25S	2.95
1	Wheel Abrasive Rubber Sucly-Wheel Shape 0.625 in dia 25S	2.95
2	Disk Abrasive silicon carbides 7/8 in dia 100S	5.90
2	Dispenser Alloy-Mercury Dental 5.50@	11.00
6	Dispenser Strip Dental 1.75@	10.50
4	Dissector Periodontal Tissue Crane-Kaplin Asst. 10.75@	53.00
2	Elevator Periosteal Seldin No 22 6.00@	12.00
2	Elevator-Retractor Dental Periosteal Seldin No 23 6.00@	12.00
26	Elevator Root Asst. 6.00@	156.00

4	Excavator Dental Darby-Perry No 5&6 6.00@	24.00
4	Excavator Dental Darby-Perry No 21 & 22 6.00@	24.00
30	Explorer Dental Asst. 1.50@	45.00
2	File Bone Seldin No 11 8.75@	17.50
4	File Margin Finishing Dental Rhein No 31&32 2.00@	8.00
8	File Periodontal Bunting Asst. 8.75@	70.00
3	File Set Pulp Canal Dental Assorted set of 6 2.50@	7.50
4	File Periodontal Crane-Kaplin No 7&8 8.75@	35.00
4	Ronguer Mead	64.00
4	Forceps Periodontal Pocket Marking Crane-Kaplin	30.00
2	Forceps Rubber Dam Clamp Dental 3,90@	7.80
8	Forceps Tooth Extracting Asst. 16.00@	128.00
18	Forceps Tooth Extracting Asst. 16.00@	288.00
1	Guide Mold Dental Myerson	37.50
4	Guide Shade Dental Silicate Cement	11.20
8	Guide Shade Teeth	37.40
2	Bath Water Dental Impression Compound Thermostically Controlled 110 Volt 60 Cycle AC 102.00@	204.00
4	Holder Broach Dental 1.10@	4.40
2	Dispenser Absorbent and Cotton Dental 2.50@	5.00
2	Dispenser Cotton Pellet Dental .90@	1.80
2	Dispenser Mercury Dental 2.50@	5.00
6	Holder Napkin Dental .35@	2.10

2	Holder Rubber Dam Dental 3.25@	6.50
12	Impression Material Dental Cakes	7.80
18	Impression Material Dental Sticks	27.90
6	Impression material dental paste 1.40@	8.40
26	Excavator Dental Black	62.36
8	Trimmer Gingival Margin Black 2.15@	17.20
10	Chisel Dental Black Asst. (Bin-Angle) 2.00@	21.30
4	Excavator Dental Black Asst. (Discoid) 2.10@	8.40
2	Carrier Gold Foil Black (Holding Instrument) 2.75@	5.50
4	Plugger Plastic Filling Dental Gregg Asst.	10.00
4	Plaster Dental Impression 5 lb. 1.85@	7.40
2	Forceps Dressing No 17 2.00@	4.00
8	Plier Dental Asst. 6.75@	50.70
24	Plugger Amalagam Dental Asst. 2.50@	60.00
10	Plugger Pulp Canal Asst. 2.50@	25.00
2	Wheel Abrasive Diamond Angle .70@	1.40
2	Wheel Abrasive Diamond Straight Handpiece Tapered Cone 1/16 by 5/64 by ¼ inches .75@	1.50
2	Point Assortment Pulp Canal Gutta-Percha 150S 2.00@	4.00
2	Point Asst. Pulp Canal Paper 2.20@	4.40
26	Wheel Abrasive Silicon Carbide Angle Hand Piece Asst. 2.00@	55.60
2	Sich Medicament Dental .25@	.50
2	Probe Abscess Silver 2.70@	5.40

2	Punch Dental Rubber Dam 8.70@	17.40
2	Reamer Set Pulp Canal Set of 6 4.00@	8.00
6	Retainer Matrix Dental No 1 2.80@	16.80
6	Band Set Matrix Dental Asst. No 1 Set of 12 .20@	1.20
4	Retainer Matrix Dental Tofflemire 15.00@	60.00
4	Band Set Matrix Dental Tofflemire 3.00@	12.00
4	Retainer Matrix Dental No 9 6.40@	25.60
4	Band Set Matrix Dental Asst. No 9 Set of 12 1.23@	4.92
4	Strip Matrix Dental 20Ft. 1.25@	5.00
6	Retractor Gingival Thoma No 1 & 2 2.50@	15.00
30	Scaler Dental Jaquette Asst. 2.00@	60.00
2	Scissors Collar and Crown Curved Bebee 4½" 2.50@	5.00
2	Scissor Collar and Crown Straight Universal 4½" 3.30@	6.60
2	Scissors Oral Surgical Curved 4 3/4 in 5.00@	10.00
2	Separator Teeth Dental Curved Jaw Elliott 6.25@	12.50
2	Wheel Set Abrasive Madrel Mounted Asst. Set of 6 2 at 1.90@	3.80
20	Mixing Slab Dental 3 by 6 inches 1.40@	28.00
40	Spatula Dental Asst.	100.50
2	Splint Jaw Erich .40@	.80
2	Stopping Temporary Dental 1 oz. 1.35@	2.70
2	Plastic Strip Dental Matrix Cellulose Clear 45Ft. 1.50@	3.00
8	Strip Asst. Abrasive Dental Grit 100S 2.00@	16.00

2	Blowtorch Alcohol 17.00@	34.00
1	Tracer Gothic Arch Dental Hight 10.00@	10.00
1	Impression Tray Dental Crown and Bridge .27	.27
14	Impression Tray Dental Edentulous Lower Asst. 1.50@	21.00
16	Impression Tray Dental Hydrocolloid Lower & Upper Asst. 2.40@	38.40
14	Impression Tray Dental Orthodontic Lower & Upper Ast. 1.40@	18.80
6	Impression Tray Dental Partial Asst. 1.40@	8.40
2	Tube and Bottle Cap Assembly Dental Suction Apparatus 4.20@	8.40
2	Cavity Lining and Thinner Set Dental 7.00@	14.00
2	Wheel Abrasive Impregnated Rubber Fine Abrasive 1/8 by 7/8 inches 100S 1.90@	3.80
2	Wheel Set Abrasive Silicon Carbide Asst. Set of 36 2.50@	5.00
2	Bur Dental Excavating Angle Handpiece Tungsten Carbide No 701 1.10@	2.20
2	Elevator Periosteal Molt No 9 4.00@	8.00
2	Wedge Set Dental Matrix Wood Set of 500 5.25@	10.50
2	Guide Shade Teeth Dentists Supply	
2	Holder Cotton Roll Dental and Saliva Ejector right and left adult size 12.25@	24.50
2	Bur Dental Excavating angle Handpiece Tungsten Carbide no 557 1.10@	2.20
2	Brush Bristle Dental Handpiece Madrel Mounted 3/4 in. 6S .60@	1.20
6	BurDental Excavating Angle Handpiece Tungsten Carbide	5.50

2	Holder Cotton Roll Dental and Saliva Ejector Right and left Child Size 2 at 13.00@	26.00
2	Forceps Tooth Extracting No 101 9.20@	18.40
4	Spraying head Dental Operating Unit Heat Reduction Apparatus 1.25@	5.00
2	Band Set Matrix Dental Asst. Tofflemire Junior Size Set of 12 1.25@	2.50
20	Mirror Mouth Examining Plane Glass .40@	8.00
6	Retainer Matrix Dental Contra-angle tofflemire junior size 6.50@	39.00
2	Bur Dental Excavating angle handpiece tungsten carbide No 37 6S 3.10@	6.20
4	Forceps Tooth Extracting Asst.	30.60
6	Paper Articulating Dental Blue 4 by 3/4 inches 144S 1.25@	7.50
2	Bur Dental Excavating Angle Handpiece Tungsten Carbide No 55B Short Neck 1.10@	2.20
6	Paper Articulating Dental Blue 4 by 3/4 inches 72S 1.25@	7.50
22	Bur Dental Excavating Angle Handpiece Tungsten Carbide Asst.	60.00
6	Band Matrix, Asst.	.96
20	Matrix Crown Dental Plastic Central	28.00
16	Bur Dental Excavating Friction Grip Angle handpiece tungsten Carbide Asst.	53.70
2	Rubber Dam Medium 6 inches square 36S 1.75@	3.50
2	Rubber Dam Heavy 6 inches square 36S 1.80@	3.60
2	Bend set Matrix Dental Tofflemire No 10 and 11 set of 12 .30@	.60

2	Matrix Crown Dental Plastic Dental Medium 12S 1.20@	2.80
2	Forceps Casting Removing Dental 6½" 2.50@	5.00
4	Floss Waxed Dental Flat Tape 100 yards 4 at .75@	3.00
2	Holder Matrix Wedge Dental Contra-angle 3.60@	7.20
2	Plastic Strip Dental Matrix Polyethylene Terephthalate Clear 45 feet .65@	1.20
10	Bur Dental Excavating Angle Handpiece Tungsten Carbide Short Shank Asst.	33.10
2	Impression Material Dental Hydro Colloid Alginate Type Slow Setting 1 lb 1.60@	3.20
2	Silver Alloy Pellet Dental 400S 5 oz. chg in allow (R-x 6520-500-2050) 7.30@	14.60
2	Bur Dental Surgery Straight Handpiece Tungsten Carbide Tapered Fissure no 703 6S 2.50@	5.00
6	Elevator Root West Asst. 3.30@	19.80
6	Capsule and Pestle Dental Amalgamator 2.00@	12.00
8	Bur Dental Excavating Friction Grip Angle Handpiece Tungsten Carbide Asst.	23.80
2	Holder Amalgam Capsule Dental Plastic .60@	1.20
2	Floss Unwaxed Dental Flat Tape 200 Yards .50@	1.00
1	Point Assortment Pulp Canal Silver 90S 6.75@	6.75
2	Impression Material Dental Hydro Colloid Alginate type fast setting 1 lb. 1.50@	3.00
2	Crown Set Temporary Dental Corrosion Resisting Steel Posterior Crown Asst. Set of 36 9.70@	19.40
2	Crown Set Temporary Dental Corrosion Resisting Steel Anterior Crown Asst. Set of 36 9.00@	18.00

2	Reamer Set Pulp Canal Set of 12 1.90@	3.80
2	Reamer Set Pulp Canal Set of 12 2.60@	5.20
2	Holder Rubber Dam Dental U Shaped 1.90@	3.80
2	Sealing Compound Pulp Canal Dental 6.90@	13.80
2	Spreader Cutta-Percha Dental 2.10@	4.20
2	Brush Polishing Dental Handpiece Nautral or Nylon Bristle 24S .95@	1.90
10	Insert Handpiece Dental Ultra Sonic Prophylaxis Unit Straight Asst. Types 17.00@	170.00
2	Tray Alloy Acessory Dental Plastic 1.25@	2.50
2	Dispenser Alloy Pellet Dental Plastic 3.00@	6.00
2	Forceps Articulating Paper Dental 6 inch 2.10@	4.20
2	Handle Dental Instrument Point Chuck Type 2.10@	4.20
12	Scaler Point Morse Asst. 1.40@	2.80
4	Lubricant Dental 3 oz. .75@	3.00
4	Froceps Tooth Extracting No 88R & 88L 7.80@	31.20
4	Carrier Amalgam Ivory Type 3.60@	14.40
4	Bur Dental ExcavatingFriction Grip Angle Handpiece tungsten Carbide Asst.	13.60
2	Wheel Abrasive Flat Edge Ultra Speed	2.50
2	Wheel Abrasive Rounded Edge Ultra Speed	2.00
2	Wheel Abrasive Ball Edge Ultra Speed	1.40
1	Wheel Abrasive Flame Shaped Edge Ultra Speed	.75
3	Wheel Abrasive Cylinder Edge Ultra Speed	2.25
2	Wheel Abrasive Inverted Cone Edge Ultra Speed	1.50

4

3	Wheel Abrasive Tapered Edge Ultra Speed	2.30
2	Mandrel Dental Handpiece Angle Handpiece 6S 3.20@	6.40
2	Mandrell Dental Handpiece Straight Handpiece Spring Type 6S 3.00@	6.00
10	Handpiece Angle Dental Prophylaxis Hexagonal Sleeve 16.00@	160.00
4	Cup Polishing Dental Handpiece 1.20@	4.80
1	Wheel Abrasive Abrasive Aluminum oxide 1½ by 0.033 inches 100S 5.00@	5.00
10	Developer X-Ray Film Processing Rapid Speed Liquid QS 5 Gal 2.60@	26.00
10	Fixer X-Ray Film processing liquid QS 5 Gal 2.45@	24.50
2	Adapter Dental X-Ray Film Bitewing 100S .80@	1.60
20	Hanger X-Ray Film Processing Dental 3.15@	63.00
10	Holder Set Dental Radographic Film Exposure Bitewing 1.70@	17.00
10	Holder Dental Radiographic Film Exposure 10S .65@	6.50
2	Viewer Dental Radiographic Film 110 Volt AC-DC 23.00@	46.00
2	Safe Dental X-Ray Film Protective 19.00@	38.00
1	Safe Light Darkroom Photographic Ceiling X-Ray Filter 12.50@	12.50
1	Safe Light Darkroom Photographic Bench or Wall Type 18.00@	18.00
21	Basin Emesis Corrosion-Resisting Steel 5.50@	11.00
4	Jar Surgical Dressing Corrosion-Resisting Steel 13.00@	64.00
4	Jar Forceps Corrosion Resisting Steel 7.00@	28.00

4	Jar Surgical Syringe 13.00@	52.00
12	Tray Instrument Corrosion-Resisting Steel 8 7/8 by 5 by 2 inches 20.00@	240.00
18	Gown Operating,Surgical Asst. 3.00@	54.00
1	Graduate Liquid Laboratory Glass 100ML 2.50@	2.50
1	Mortar and Pestle Glass 2.50@	2.50
10	Spatula Laboratory 3½ in blade 2.00@	20.00
2	Timer Interval Clock 7.50@	15.00
2	Magnifer Glass Reading 4½ inches 6.50@	13.00
2	Thermometer Self-Indicating Bimetallic Dial 8½ inches 7.50@	15.00
2	Disinfectant Germicidal and Gunficidal 5 gal 2.50@	5.00
2	Model Anatomical Human Skull 1.25@	2.50
200	Towel Hand .75@	150.00
40	Cup Paper 4 to 5 oz. cap nonparafined 100 per CTN 5.00	5.00
40	Box Setup Mailing Dental Large & Small	40.00
LAB:		
1	Soldering and Brazing outfit Resisting heating 110 Volt 60 Cycle AC	125.00
10	Table Laboratory Prosthetic 284.00@	2,840.00
10	Chair Rotary Dental Prosthetic 25.00@	250.00
1	Curing Unit Denture Two State 110 Volt 60 Cycle AC 240.00@	240.00
3	Grinding And Polishing Machine Dental Laboratory Bench Mounted 110 Volt 60 Cycle AC 75.00@	225.00
1	Trimmer Dental Model 110 Volt Volt 60 Cycle AC 95.00@	95.00

1	Oven Laboratory Drying Small 110 220 Volt AC-DC	175.00
1	Double Boiler Cooking $2\frac{1}{2}$ quart cup Extending Handles Cres w/o coating or plating	5.00
2	Belt Round Engine 9 foot 4 inches	2.00
1	Tube Rubber Translucent 3/16 inch inside dia. 3/64 inch wall	5.00
2	File Hand Half Round	2.75
1	Knife Craftsman Dental	1.70
1	Pliers Diagonal Cutting Wire $5\frac{1}{2}$"	6.50
1	Shears Metal Cutting Hand Straight 7-3/4"	4.50
1	Pliers Parallel Jaws Cutting Bernard $5\frac{1}{2}$"	4.50
2	Tweezers Craftsman Soldering	3.50
1	Stone Sharpening Carborundum 8 by 2 by 1 inches	2.75
1	Rouge Abrasive 2 oz.	1.25
1	Knife Compound Dnetal with Detachable Blade	1.25
1	Disk Set Abrasive Dental Handpiece Paper Assorted with stand set of 525	5.50
1	Wheel Set Abrasive Rubber Straight Handpiece Set of100	2.50
1	Burner Outfit Gas Dental Laboratory Acetylene	7.50
2	Burr Denture Trimming Straight Handpiece No 1 6S	2.00
4	Cabinet Procelain Teeth Compartmented	20.00
10	Carver Dental Roach 2.00@	20.00
1	Casting Machine Dental Metals Large	125.00
10	Work Box Dental Laboratory	35.00
2	Chisel Denture Trimming Bevel	2.00

1	Press Denture Flast	7.50
4	Clay Modeling ½ lb	3.00
2	Cone Flet Dental Grinding and Plishing Machine Pointed	1.00
1	Flast Set Denture Set of 2	10.50
1	Flux Casting Dental Reducing 1 oz.	2.50
1	Former Arch Rim Dental	3.75
1	Soldering Frame Dental	1.25
1	Furnace Dental Laboratory Electric Small with Pyrometer 110 Volt AC-DC	125.00
4	Chick Grinding and Polishing Machine Dental Lab. Burr (Right and Left)	22.50
2	Hood Dental Laboratory Grinding and Polishing Machine	12.50
4	Spring Dental Grinding and Polishing Machine	3.00
2	Mandrell Dental Handpiece Straight Handpiece Screwhead No 303 6S	3.00
1	Mixer Dental Casting Investment Mechanical	15.50
7	Pliers Dental Assorted	35.00
1	Clamp and Ejector Denture Flask	7.50
1	Flask and Bridge (Denture Crown)	5.00
1	Resin Acrylic Dental Denture Base Material Clear 210 GM	15.00
1	Resin Acrylic Dental Denture Base Material Pink 210 GM	3.00
6	Resin Acrylic Dental Crown and Bridge Schade Asst.	18.00
1	Resin Acrylic Dental Denture Base Repair Pink ½ lb	10.00
1	Acrylic Resin Liquid Dental 8 oz.	10.00

1	Frame Dental Laboratory Saw	2.50
1	Blade Dental Laboratory Saw Spiral No 1 Blade 12S	2.50
1	Scale Inlay Investment Proportioning Dental	6.30
1	Scissors Collar and Crown Curved Beebe $4\frac{1}{2}$"	5.00
1	Scissors Collar and Crown Straight Universa 4-12 in	5.00
2	Scraper Denture Finishing Kinksley	3.00
1	Wheel Set Abrasive Alumina or Silicol Carbide Mandrel Mounted Assorted Set of 6	2.00
10	Mixing Slab Dental 3 by 6 inch	12.00
30	Spatula Dental Assorted	41.00
1	Surveyor Dental Clasp Stationary	65.00
4	Flask Denture Ejector Type	30.00
1	Tooth (10 Sets) Asst. Plastic	20.00
1	Tooth Facings and Backings set with cabinet (10 sets)	20.00
1	Blowtorch Alcohol	7.50
3	Vibrator Dental Molding 110 Volt 60 Cycle AC	60.00
4	Brush Fiber Rotary Wheel	8.00
1	Wheel Buffing chamois 3 in	4.00
1	Wheel Buffing Cloth 4 in	5.00
3	Cylinder Graduated Laboratory 250	3.50
1	Burner Gase Laboratory Bunsen with Spider	6.50
1	Casserole Laboratory 125 ML	3.00
1	Balance Prescription Dental Precious Metals 15 mg Sensitivity	12.00

1	Hydrochloric acid ACS 1 lb	2.00
4	Brush Scrub Artists inlay No 3	2.00
10	Box Setup Mailing Dental Large	10.00
10	Apron Laboratory Plastic	10.00
2	Tin Foil ½ lb	2.50
6	Mouthpiece Saliva Ejector Dental Plastic Disposable 500S 9.75 per/100	60.00
4	Impression Material Dental Hydrocolloid Alginate $4.50@	18.00
60	Cement Silicate Dental Assorted	450.00
4	Pad Dental Rubber Dam 8 b6 9 inches 50 S 2.50@	10.00
2	Wax Dental Baseplate Hard ½ lb 1.40@	7.00
5	Wax Dental Baseplate Medium ½ lb. 55@	2.75
5	Wax Dental Boxing 1 lb 1.20@	6.00
2	Wax Dental Disclosing 2 oz. 1.80@	3.60
2	Wax Dental Impression 3 oz. 1.10@	2.20
5	Wax Dental Inlay 1 oz. .35@	1.85
5	Wax Dental Sticky 2 ox. .65@	3.25
40	Film Dental Radiographic Assorted	95.50
20	Mount Radiographic Film Dental	123.00
20	Film Dental Radiographic High Speed 1-1/16 by 2/18 inches 25S 2.10@	21.00
10	Film Radiographic Dental 1¼ by 1-5/8" 150S 3.90@	39.00
5	Envelope Photographic Negative 3 by 4-1/1 100S	10.00
5	Pad Prescription Blank 100S	10.00

5	Envelope Radiographic Film Mount Dental $5\frac{1}{2}$by$9\frac{1}{4}$ inches 100S	10.00
5	Envelope Film Mount Dental 3-1/8 by $5\frac{1}{2}$ inches 100S	5.00
4	Towel Paper Plastic Coated on one side disposable dental 100S	10.00
2	Foss Waxed Dental 100S Yards	3.00
40	Towel Paper Disposable Dental 100S	20.00
	Grease General Purpose $\frac{1}{2}$ oz.	3.00
	Lubricating General Purpose 4 oz.	5.00
LAB:		
1	1 Buffing Compound Tripoli $\frac{1}{4}$lb	3.50
1	Chalk Prepared NF 1 lb.	1.50
4	Soap Soft Medicinal USP 1 lb	2.00
10	Pumice NF coarse 1 LB	5.00
1	Pumice NF Flour 1 lb	.75
1	Chloroform USP 1 Pt	1.25
4	Plaster Orthopedic and Dental Modeling 25 lb	20.00
1	Flux Soldering Paste $\frac{1}{2}$ oz.	2.50
1	Dental Wax Solvent 1 qt	3.50
4	Investment Dental Inlay $3\frac{1}{2}$ lb	20.00
4	Investment Dental Model 35 lb	25.00
1	Soldering Pencil Dental Model Slate 12S	.50
6	Stone Artifical Dental 35 lb	30.00
1	Acetone ACS 1 pt	2.00

SUPPLIES: LAB

	Sulfuric Acid ACS 1 Pt (Oiland vitriol)	2.00
1	Xylene ACS 1PT (XYLOL)	3.00

TOTAL:

EQUIPMENT			46,823.66
SUPPLIES:	Lab Supplies	$941.65	
	Library	150.00	
	Teaching Supplies	150.00	
			1,241.65
INSTRUCTION:	Teacher-Coordinator		10,000.00
			$58,065.31

EQUIPMENT NEEDED FOR RADIOLOGIC TECHNOLOGY PROGRAM:

A0640A	DXS-350 Generator	$ 9,050.00
B0111Ba	Monitrol-15	5,450.00
B2051BE	48-3 Tube Hanger	3,625.00
B2051BB	Wall Cable Take-Up Reel	575.00
B8495DD	Low Voltage Cable	75.00
C00070DB	Phototimer Exposure Control	20.00
2-C1665E	H-V Cable	410.00
C2662FA	Super-Speed Bucky	380.00
C2663D	12:1 Ratio Grid	320.00
D1033A	HDN-18, 1.0-2.0 Tube Unit	1,680.00
E6312AC	True Field Collimator	455.00
4	14 x 17 inch cassette (less screens) (33.00@)	132.00
4	pair of 14 x 17 inch par speed screens) (63.15@)	252.60
4	10 x 12 inch cassette (less screens) (26.60@)	106.40
4	10 x 12 screens (31.85@)	127.40
4	8 x 10 inch cassette (less screens) (23.50@)	94.00
4	8 x 10 screens (21.35@)	85.40
4	7 x 17 inch cassette (less screens) (30.452)	121.80
4	7 x 17 screens (31.85@)	127.40
16	Processing film hangers (4.25@_	68.00
1	Mechanical interval timer	14.00
1	Floating thermometer	5.00

1	Mixing paddle (for darkroom solutions)	3.00
1	Film Storage Bin	71.00
1	Portable darkroom safelight	18.00
1	Ceiling mounted darkroom safelight	12.00
1	gallon developer tank with lid (5 gallon capacity)	65.00
1	5 gallon fixer tank	65.00
1	5-15-5 master tank (non-refrigerated)	565.00
1	14 x 17 film file cabinet (one drawer)	45.50
1	7 x 17 leaded film divider	5.00
1	Mobile viewing stand with four view boxes	184.00
1	wall mounted cassette holder	30.00
1	penetrometer	27.00
1	timer top (could be home made)	20.00
1	Colcher-Sussman pelvimetry ruler	20.00
1	set of positioning blocks	35.00
	Assorted sizes and weights of sandbags (could be made)	5.00
1	Barium mixer (soda fountain malt mixer is more than adequate--also a blender could be used)	20.00
1	caliper	8.50

SUPPLIES NEEDED FOR RADIOLOGIC TECHNOLOGY PROGRAM:

	Generous supply of 1 inch adhesive tape	
	Assorted sizes of disposable syringes	20.00
	Assorted sizes of disposable needles	10.00
1	Safety film badge service for 30 people (18.00 per Month)	216.00
	Barium enema set-ups (disposable) (.70@)	7.00
1	small drum of Barosperse (barium sulphate)	10.00
1	5 gallon developer supply (will need this item once every three months)	24.00
1	5 gallon fixer supply (will need this item every three months)	23.20
1	box of 14 x 17 film--par speed (will need this item every month)	743.40
500	14 x 17 film filing folders (will need this item every four months)	23.00
1	extension cylinder for use on the x-ray tube housing	75.00
4	Mobile x-ray protective screens 3 for table 1 for operator (162.00@)	648.00

TOTAL:

Equipment			$25,021.00
Supplies:	lab supplies	1,151.60	
	library	102.25	1,403.85
	teaching supplies	150.00	
Instruction:			
	Teacher-Coordinator	10,000	
	Consulting Director	600	
			10,600.00
			$37,024.85

EQUIPMENT FOR THE MEDICAL LABORATORY TECHNICIAN PROGRAM:

1 Centrifuge, floor mdoel	$ 835.00
1 Centrifuge, hematocrit	195.00
1 Serofuge, Adams	106.50
1 Waterbath, Dual control	300.00
1 Spectrophotometer Jr. II	595.00
1 Penberty aspirator	8.25
1 Washer head, pipete, Clay-Adams	6.75
6 Test Tube Racks, metal	40.20

SUPPLIES FOR THE MEDICAL LABORATORY TECHNICIAN PROGRAM:

1 dz. Bottles, polyethylene, dropping	5.40
12 gross Microscope slides	30.00
1 cs. Centrifuge tubes, 15 ml. graduated	33.36
2 dz. O.2cc prothrombin pipets	20.40
2 cs. 1.0cc pipets, graduated in 0.01	42.84
1 cs. 0.02cc pipet graduated in 0.001	41.94
2 cs. 0.5cc graduated in 0.01	24.00
2 dz. Rubber bulbs	.96
2 dz. Cuvettes, Coleman Jr. Grade A 19 x 105	25.00
2 dz. Cuvettes, Coleman Jr. Grade 12 x 75	23.00

*Revised by Miss Celista Hudspeth, April 10, 1968

3 bx. pipette, disposal 5 3/4" 2 1/2 gross / bx.	25.50
1 Adapter Cuvette 12 x 85	10.00
1 btl. Cleaning Wire, Blood pipette	1.50
24 rls. Tape. label, white ½" Professional time tape	
10 gms. Cresyl, Birlliant Blue	7.00
10 Thermometer 10 to plus 110C-1° division 6.80@	68.00
1 Anerobe Jar	48.50
1 doz-Test Tube rack polyethylene	19.80

EQUIPMENT FOR THE MEDICAL LABORATORY TECHNICIAN:

6 Stopwatches, 7 jewel movement, 60 second sweep, start, stop and fly back from crown, 30 minute capacity.	210.00
1 Multi-Timer--Coulke Electronics	89.50
1 Leitz Microscope (Ortholux) with photographic attachment	3,113.00
(Photographic attachment)	401.50
3 AO Microstar Microscopes @ $703.00	2,109.00
1 Balance Thaus Triple Beam	23.50
1 Microgasometer	395.00
1 Drying Oven	285.00
1 Flame Photometer Coleman	503.00
1 Electrophoresis (S & S) EA1-$215.00 EA4-$425.00	640.00
1 autoclave	253.00
1 incubator model 2	195.00
1 Refrigerator (Commercial) (double-door-freezer) (ice-box--vertical for extra shelf space) 32 cubic feet--Perlick or utility mfg.	815.00

EQUIPMENT FOR HEMATOLOGY:

1 pipette shaker	73.50
1 Hematocrit Reader	14.00
1 Stain Rack	27.00
1 Sedimentation Rack (westergren)	18.75
6 Hand Tallies	27.00
1 Differential counter	98.00

SUPPLIES FOR HEMATOLOGY:

4 Hemocytometers	46.08
3 dz. cover slips for hemocytometer	10.80
2 dz. Rubber tubing for blood diluting	1.50
1 dz. vials hematocrit tubes, red tip Heparanized	18.00
2 viasl Capillary clotting tubes	1.50
1 bx. Hycel Hemoblobin standard	7.50
6 pkg, Erythrocyte pipettes	60.00
6 pkg. Leukocyte pipettes	60.00
6 pkg. Sahli Hemoglobin (accupets)	67.50
6 Westergren sed. Rate pipettes	11.22
1 pkg. simplastin, 6 determination size	6.00
1 pkg, Diagnostic Plasma	9.00
1 pkg. Fibronogen	4.00
1 pkg. Platelin	12.00
1 btl. 4 ox. oil, immersion, corgille (Shillabuis) O, Type A	2.05

EQUIPMENT FOR SEROLOGY:

1 Rotator-Time Tek	60,00

SUPPLIES FOR SEROLOGY:

6 btls. stoppered, VDRL antigen	13.56
1 dz. VDRL slides	5.50
1 dz. Febrile slides	15.00
1 btl. solution, 1% Gold chloride (4 oz.) Harleco	8.20
1 btl. VDRL Antigen (Sylvana)	6.70
1 Kit C-RP Hyland	13.50
1 Kit RA Hyland	13.50
3 bs. ASO Reagent Difco	6.00
1 bx. ASO Buffer Difco	6.00
1 btl. Antigen, Guinea Pig Kidney	6.00
5 ml. Hyland	6.50
1 set Febrile Antigens: Hyland	3.00
Typhi-H 5 ml.	3.00
Typhi-O 5 ml.	3.00
Paratyphi-A 5 ml.	3.00
Paratyphi-B 5 ml.	3.00
Proteus OX-19 5 ml.	3.00
Brucellosis Abortus 5 ml.	3.00

EQUIPMENT FOR BLOOD BANKING:

1 RH View Box	23.75

SUPPLIES FOR BLOOD BANKING:

1 btl. Anti-A typing Sera, 5cc)	5.00
1 btl. Anti-B typing Sera, 5cc)	
1 btl. Anti-D typing Sera, 5cc	10:00
1 btl. Coombs 2cc	5.00
1 btl. Albumin(22%) 10cc	10.00

SUPPLIES FOR URINES:

1 dz. midget urinometers	19.20
2 dz. Urinometer floats	22.80
1 btl. Clinitest Tablets (ames)	.50
1 btl. Tablets, Inctoest (ames)	4.00
1 btl. Labstik (ames)	
1 HCG-Test (25 determinations)	17.50

SUPPLIES NEEDED FOR MEDICAL LABORATORY TECHNICIAN PROGRAM:

4 Cylinder, Graduated, white line 25cc	4.44
4 Cylinder, Graduated, white line 100cc	6.28
2 Cylinder, Graduate, white line 1000cc	11.40
1 cs. Flask, Volumetric with stopper, kimax 25cc	34.44
1 cs. Flask, Volumetric with stopper, kimax 50cc	36.84
1 cs. Flask, Volumetric with stopper, kimax 100cc	39.24
1 cs. Flask, Volumetric with stopper, kimax 500cc	61.20
1 cs. Flask, Volumetric with stopper, kimax 1000cc	37.14

2 Mortar and Pestle, Porcelain coors, size 0	2.28
1 dz. Funnels, Polyethylene $4\frac{1}{4}$ in. dia.	2.50
6 Flasks, Boiling flat bottom 2000 capacity	12.24
1 cs. Flasks, Erlenmeyer with stopper, Kimax 250cc	33.00

SUPPLIES NEEDED FOR MEDICAL LABORATORY TECHNICIAN PROGRAM:

Buttress Cup

2 dz. Bottles, Amber, Polyethylene capacity 8 oz.	8.04
2 dz. Bottles, Amber, Polyethylene capacity 16 oz.	11.08

Miscellaenous Supplies needed for Medical Laboratory:

3 lb. Cleaning Compound, Alconox	2.25
6 pkgs. Filter Paper, Whatman No. 42 llcm.	12.66
6 pkgs. Filter Paper, Whatman No. 2 llcm.	3.96
6 pkgs. Filter Paper, Whatman No. 2 18.5 cm.	9.18
1 dz. Brushes, Bottle Nylon diam. $\frac{1}{2}$ in.	1.60
1 dz. Brushes, pipet Nylon diam. 3/4 to 1/8 in.	3.60
6 Wire Gauze, asbestos center 6 x 6	2.40

EQUIPMENT NEEDED FOR MEDICAL LABORATORY TECHNICIAN PROGRAM:

2 Test Tube Baskets 6 x 6 x 6	5.60
1 Standard, Calibrating, Didymimum	22.00
1 Panel Scale, Hgb, with direction (Model 6/20)	12.00
1 Adapter, Cuvetter, 19 x 105mm round	12.50
2 Burner, Natural Gas, Fisher	12.50
1 Burner, Micro, Fisher Natural Gas	2.50

2 Forceps, Specimen, straight tip 150mm	3.70

REAGENTS--SUPPLIES:

1 bs. Reiter Protein Complement Antigen Hyland Box	12.50
1 bs. Complement, Lyo Guinea Pig, 7cc Hyland only	6.50?
Versatol-E	21.00
Versatol-E-N	21.00
Versatol-(3x5 ml. vials)	7.50
Versatol-A Alternate	21.00
1 btl. Glytel Reagent Pfizer 100 test	13.00
Chemcial Reagents est. (1 year)	55.00

TOTALS:

Equipment			$11,491.80
Supplies:	lab supplies	1,424.58	
	library	184.70	
	teaching supplies	150.00	1,759.28
Instruction:	Teacher-Coordinator	10,000	
	Consulting Director	600	10,600.00
			$23,851.08

MENTAL HEALTH ASSOCIATE BUDGET:

TOTAL:

FACUTLY:	Teacher-Coordinator--	920.00	
	Consulting Director---	300.00	$1,220.00
SUPPLIES:	Teaching Supplies--	200.00	
	Duplicating	75.00	
	Library	150.00	425.00
TOTAL			$1,645.00

APPENDIX

APPENDIX

LIST OF TABLES - FIGURES - CHARTS

TABLES PAGE

1) Population - Amarillo Retail Trade Area 210

2) Figures 3 - Area Survey Map of Practicing Physicians 217

3) Table 5 - Practicing Physicians - Auxiliary Personnel Summary Report. 218

4) Figure 4 - Area Survey Map of Nursing Homes 221

5) Nursing Home Summary, Final Totals. 222

6) Figure 5 - Survey Map, Selected Hospital Personnel 225

7) Table 7 - Amarillo Region Selected Hospital Personnel, Response to Summary 228

8) Table 8 - Selected Personnel Needs in Hospitals, (Amarillo Area) 229

9) Table 8.1 - Personnel in Hospitals (Texas). 231

10) Table 8.2 - Personnel Needs in Hospitals (U.S.) 232

11) Hospital Summary Report, December, 1967 (Amarillo). 233

12) Salary Ranges - Hospital Distribution Totals, Full-Time Personnel 235-6

13) Table 1 - Health Occupations Personnel. 238

14) Advisory Committees. 246

POPULATION[1]

AMARILLO RETAIL TRADE AREA

COUNTY	1950	1960	% Change 1950-60	1966	% Change 1960-66
TEXAS					
Armstrong	2,215	1,966	11.2	2,000	01.7
Bailey	7,592	9,090	19.7	10,000	10.0
Briscoe	3,528	3,577	01.4	3,700	03.4
Carson	6,852	7,781	13.6	7,800	00.2
Castro	5,417	8,923	64.7	11,200	25.5
Childress	12,123	8,421	-30.5	7,400	-12.1
Collingsworth	9,139	6,276	-31.3	5,300	-15.5
Cottle	6,099	4,207	-31.0	3,500	-16.8
Dallam	7,640	6,302	-17.5	5,900	06.8
Deaf Smith	9,111	13,187	44.7	17,100	29.6
Donley	6,216	4,449	-28.4	3,800	-14.5
Floyd	10,535	12,369	17.4	14,300	15.6
Gray	24,728	31,535	27.5	34,200	08.4
Hale	28,211	36,798	30.4	43,500	18.2
Hall	10,930	7,322	-33.0	6,100	-16.6
Hansford	4,202	6,208	47.7	7,200	16.0
Hartley	1,913	2,171	13.5	2,400	10.5
Hemphill	4,123	3,185	-22.8	2,800	-12.0
Hutchinson	31,580	34,419	09.0	35,500	03.1
Lamb	20,015	21,896	09.4	24,300	11.0
Lipscomb	3,658	3,406	-06.9	3,400	-
Moore	13,349	14,773	10.7	15,400	04.2
Motley	3,963	2,870	-27.6	2,400	-16.3
Ochiltree	6,024	9,380	55.7	11,400	21.5
Oldham	1,672	1,928	15.3	2,300	19.2
Parmer	5,787	9,583	65.6	11,400	19.0
Potter	73,366	115,580	57.7	127,943	10.6
Randall	13,774	33,913	146.2	57,841	70.5
Roberts	1,031	1,075	04.3	1,100	02.3
Sherman	2,443	2,605	06.6	2,800	07.4
Swisher	8,249	10,607	28.6	12,200	15.0
Wheeler	10,317	7,947	-23.0	7,000	-11.9
TOTALS	355,802	443,749	24.7	503,184	13.3
GRAND TOTAL	536,065	621,121	15.8	688,094	10.7

[1] Prepared by Amarillo Chamber of Commerce
Area comparable to Amarillo Medical Referral Area.

POPULATION

AMARILLO RETAIL TRADE AREA

COUNTY	1950	1960	% Change 1950-60	1966	% Change 1960-66
Colorado					
Baca	7,964	6,310	-20.8	6,300	-0.1
Kansas					
Meade	5,710	5,505	-3.6	5,700	3.5
Morton	2,610	3.354	28.5	3,800	13.2
Seward	9,972	15,930	59.7	18,700	17.3
Stevens	4,516	4,400	-2.6	4,410	0.2
TOTALS	22,808	29,189	27.9	32,610	11.7
New Mexico					
Curry	23,351	32,691	40.0	37,600	15.0
Quay	13,971	12,279	-12.1	13,100	6.6
Roosevelt	16,409	16,198	-01.3	17,700	9.2
Union	7,372	6,068	-17.7	6,000	-1.1
TOTALS	61,103	67,236	10.0	74,400	10.6
Oklahoma					
Beaver	7,411	6,965	-6.0	7,100	01.9
Beckham	21,627	17,782	-17.8	16,300	-8.3
Cimarron	4,589	4,496	-02.0	4,500	-
Ellis	7,326	5,457	-25.5	5,100	-07.0
Greer	11,749	8,877	-24.4	7,900	-12.3
Harmon	8,079	5,852	-27.6	5,200	-12.5
Harper	5,977	5,956	-00.4	5,900	-00.9
Roger Mills	7,395	5,090	-31.2	4,600	-10.6
Texas	14,235	14,162	-00.5	15,000	05.9
TOTALS	88,388	74,637	-15.5	71,600	-04.2

PRACTICING PHYSICIAN'S QUESTIONNAIRE M.D.'s

COUNTIES SURVEYED

Texas

1. Armstrong
2. Bailey
3. Briscoe
4. Carson
5. Castro
6. Childress
7. Cochran
8. Collingsworth
9. Cottle
10. Crosby
11. Dallam
12. Deaf Smtih
13. Dickens
14. Donley
15. Floyd
16. Garza
17. Gray
18. Hale
19. Hall
20. Hansford
21. Hartley
22. Hemphill
23. Hockely
24. Hutchinson
25. King
26. Lamb
27. Lipscomb
28. Lubbock
29. Moore
30. Motley
31. Ochiltree
32. Oldham
33. Parmer
34. Potter, Randall
35. Roberts
36. Sherman
37. Swisher
38. Wheeler

Oklahoma

39. Beaver
40. Beckham
41. Cimarron
42. Ellis
43. Greer
44. Harmon
45. Harper
46. Roger Mills
47. Texas

New Mexico

48. Curry
49. Quay
50. Roosevelt
51. Union

Colorado

52. Baca
53. Las Animas

Kansas

54. Meade
55. Morton
56. Seward
57. Stevens

School of Health Occupations Proposal
P.O. Box 447
September 27, 1967

Dear Doctor:

Amarillo College, in establishing a School of Health Occupations designed for training semi-professional paramedical personnel, must determine the area of need. Since individual practicing physicians represent a substantial segment of employment of auxiliary personnel, your individual practice, needs, and opinions are important.

Attached is a questionnaire which may be completed by you or your representative. The questions are essentially concerned with four areas:

1. Those persons primarily engaged in duties which are largely clerical, such as: typing, filing, reception work, maintaining records, and bookkeeping.

2. Persons primarily engaged in duties requiring patient contact, such as: preparing patient for examination, directly assisting the physician with medical procedures, giving medications, collecting specimens for laboratory examinations, minor or routine clinical laboratory tests, and doing special tests such as E.K.G.

3. Persons who perform a combination of duties embracing tasks from both 1 and 2.

4. Persons particularly trained as laboratory technicians or X-Ray technicians and are principally occupied with these duties.

Your cooperation is extremely important and appreciated. The results of the survey will also be submitted to the Medical Society. A stamped self addressed envelope is enclosed.

Very truly yours,

Joe L. Lipscomb, M.D.

Joe L. Lipscomb, M.D.
Amarillo School of Health Occupations
Amarillo College

JL/bj

Enc.

DRS. VICK AND BALLARD
osteopathic physicians and surgeons
821 West Ninth
Amarillo, Texas 79101

Lester J. Vick, DO
Dr 2-6701

Wm. R. Ballard, DO
Dr 2-6701

TO MEMBERS - DISTRICT 1 - TEXAS ASSOCIATION OF O P & S:

Dear Doctor:

I am sure you are aware of the fact that the Amarillo College is proposing to build a School of Health Occupations on the Medical Center.

Through their director, Dr. Joe Lipscomb, as per letter attached---they are seeking information from all of the physicians in the Amarillo Area, by means of the questionnaire included.

This school will be a big help to our area in the future by helping provide trained efficient personnel.

Please return finished questionnaire at your earliest convenience.

Yours truly,

Lester J. Vick, D.O.
Member Amarillo Area Foundation
Hospital Committee

Enclosure

#_____ Date:__________ City, State:______________

NOTE: The individual questionaires are confidential.

1. TYPE OF PRACTICE

A. Solo or group practice. Please check one:
Solo Practice_____
Group Practice____

B. If group practice, please indicate the number of physicians participating: Number of Physicians:____

C. If group practice, and more than one of the physicians in your office have received this questionaire, please place a check in the space provided and return only one questionaire. Check here:______

D. D. Please indicate which of the following specialties are practiced in your office (whether solc or group) by placing the number of physicians engaged in a particular specialty in the space preceeding the name of the specialty.

____Dermatology
____General Practice
____Internal Medicine
____Neuro Psych.
____OB-Gyn
____Ophthalmology
____Otolaryngology
____Pediatrics
____Surgery (general)
____Surgery (special)
____Urology
____Other

II. EMPLOYMENT OF AUXILIARY PERSONNEL

A. How many auxiliary personnel are employed in your office? _____

B. How many of the auxiliary personnel are engaged primarily in:

1. office-clerical tasks _____
2. medical stenography _____

C. How many of the auxiliary personnel are engaged primarily in nursing activities? _____

1. How many of these are registered nurses? _____
2. How many of these are licensed vocational nurses? _____
3. How many of these are neither R.N.'s nor L.V.N.'s? _____

D. How many are engaged in a combination of office-clerical and nursing tasks? _____

1. How many of these are registered nurses? _____
2. How many of these are licensed vocational nurses? _____
3. How many of these are neither R.N.'s nor L.V.N's? _____

E. How many of your auxiliary personnel are specialized technicians?

1. Lab Technicians _____
2. X-ray Technicians _____

F. How many of your auxiliary personnel cannot be classifed above? _____

G. What is your expected increase or decrease in personnel in the next five years? _____

III. SALARY INFORMATION

Please check the usual beginning salary range for each of the classifications of auxiliary personnel.

	Office-Clerical	Nursing			Combination			Lab	X-Ray
		R.N.	L.V.N.	Other	R.N.	L.V.N.	Other		
Up to $249									
$250-$299									
$300-$349									
$350-$399									
$400-$449									
$450-and up									

IV. SOURCE OF AUXILIARY PERSONNEL

Please indicate with a check mark whether your auxiliary personnel always, usually, sometimes, seldom, or never are employed in your office directly from any of the following sources:

	Always	Usually	Sometimes	Seldom	Never
1. Hospital					
2. Physicians office or clinic					
3. A school or formal training program					
4. Referral from employment agency or newspaper advertisement					

V. Should Amarillo College establish a training program for medical office personnel, would you be interested in using the training program as a source of employees?

Yes ________

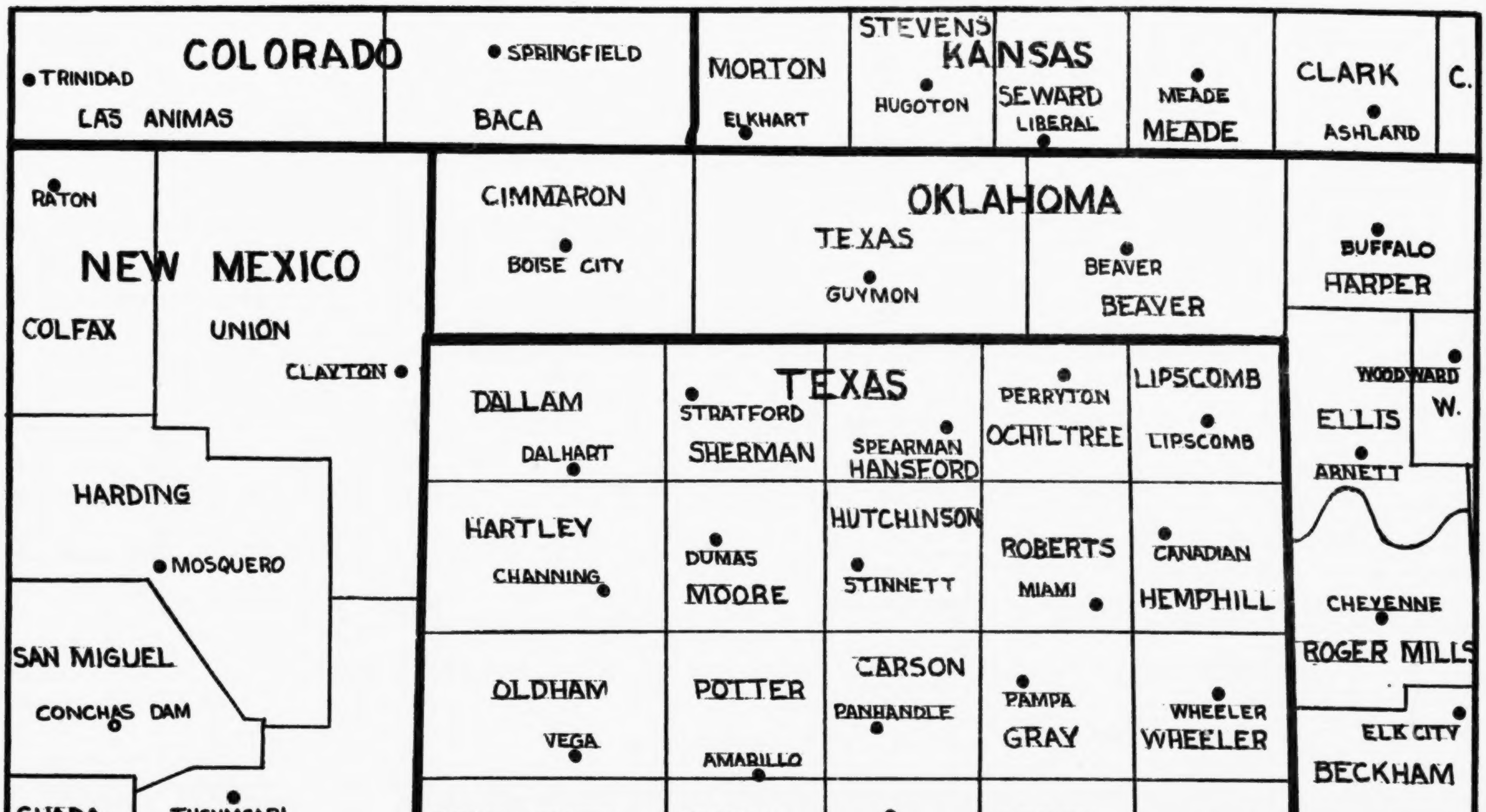
Possibly ________

No ________

Return questionaire to: Joe L. Lipscomb, M.D.
Amarillo School of Health Occupations Proposal
Amarillo College
Box 447
Amarillo, Texas 79105

Suggestions, Recommendations and criticism to the Health Occupations School steering Committee:____

FIGURE 3. AMARILLO MEDICAL REFERRAL AREA
PRACTICING PHYSICIANS SURVEY - (D.O.'s)
NOVEMBER 1, 1967


COLORADO
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SPRINGFIELD
BACA
MORTON
ELKHART
STEVENS
HUGOTON
KANSAS
SEWARD
LIBERAL
MEADE
MEADE
CLARK
ASHLAND
C.
RATON
NEW MEXICO
COLFAX
UNION
CLAYTON
CIMMARON
BOISE CITY
OKLAHOMA
TEXAS
GUYMON
BEAVER
BEAVER
BUFFALO
HARPER
TEXAS
DALLAM
DALHART
STRATFORD
SHERMAN
SPEARMAN
HANSFORD
PERRYTON
OCHILTREE
LIPSCOMB
LIPSCOMB
WOODWARD
W.
ELLIS
ARNETT
HARDING
MOSQUERO
HARTLEY
CHANNING
DUMAS
MOORE
HUTCHINSON
STINNETT
ROBERTS
MIAMI
CANADIAN
HEMPHILL
CHEYENNE
ROGER MILLS
SAN MIGUEL
CONCHAS DAM
OLDHAM
VEGA
POTTER
AMARILLO
CARSON
PANHANDLE
PAMPA
GRAY
WHEELER
WHEELER
ELK CITY
BECKHAM
GUADALUPE
SANTA ROSA
TUCUMCARI
QUAY
DEAF SMITH
HEREFORD
RANDALL
CANYON
CLAUDE
ARMSTRONG
DONLEY
CLARENDON
COLLINGSWORTH
WELLINGTON
GREER
MANGUM
HOLLIS
HARMON
J.
CURRY
CLOVIS
FORT SUMNER
DE BACA
PARMER
FARWELL
CASTRO
DIMMITT
TULIA
SWISHER
BRISCOE
SILVERTON
MEMPHIS
HALL
CHILDRESS
CHILDRESS
HARDEMAN
QUANAH
W
PORTALES
ROOSEVELT
MULESHOE
BAILEY
LITTLEFIELD
LAMB
PLAINVIEW
HALE
FLOYD
FLOYDADA
MATADOR
MOTLEY
COTTLE
PADUCAH
FOARD
CROWELL
N
W
E
S
MORTON
COCHRAN
HOCKLEY
LEVELLAND
LUBBOCK
LUBBOCK
CROSBYTON
CROSBY
DICKENS
DICKENS
GUTHRIE
KING
KNOX
BENJAMIN
LEA
LOVINGTON
PLAINS
YOAKUM
TERRY
BROWNFIELD
TAHOKA
LYNN
POST
GARZA
CLAIREMONT
KENT
STONEWALL
ASPERMONT
HASKELL
HASKELL
● COUNTY SEAT
○ LARGE CITY

AREA SURVEYED - REPRESENTED BY MEMBERSHIP IN DISTRICT I OF THE TEXAS ASSOCIATION OF OSTEOPATHIC PHYSICIANS AND SURGEONS. IN ADDITION, THERE WERE PHYSICIANS FROM THE BORDER COUNTIES OF NEW MEXICO AND OKLAHOMA.

Total Number auxiliary personnel------------------108

	Distribution of Personnel
Office Clerical	38%
Primarily Nursing	50%
Combination (Office-Clerical-Nursing)	4%
Lab (all personnel)	8%
	100%

Anticipated Increase in personnel in next five years---------15%

TABLE 5---PRACTICING PHYSICIANS-AUXILIARY PERSONNEL (M.D.'s and D.O.'s)

Salary Range Distribution Tables

Office-Clerical	Number	Percent
Up to $249	32	22%
$250 - 299	42	29
300 - 349	40	28
350 - 399	18	12
400 - 449	9	6
450 - up	4	3
Total N=	145	100%

NURSING

	R.N.		L.V.N.		Neither R.N. or L.V.N.	
	Number	Percent	Number	Percent	Number	Percent
Up to $249	1	1%	14	18%	28	37%
$250 - 299	4	5	29	37	21	28
300 - 349	19	20	24	30	10	13
350 - 399	22	25	11	15	11	14
400 - 449	24	26	0	0	3	4
450 - Up	21	23	0	0	3	4
Total N =	91	100%	N = 78	100%	N = 76	100%

	Laboratory Technicians		X-Ray Technologists	
	Number	Percent	Number	Percent
Up to $249	2	3%	1	2%
$250 - 299	5	7	3	5
300 - 349	6	8	10	17
350 - 399	10	13	11	18
400 - 449	17	23	17	29
450 - Up	35	46	17	29
TOTAL N =	75	100%	59	100%

School of Health Occupations Proposal
P.O. Box 447

To: Area Employment Officer

Subject: Nursing Home Employment Needs (convalescent homes or extended care facility).

Your cooperation is solicited to aid the Amarillo College and the Amarillo Area Foundation in providing opportunity for training in the various semi-professional vocations, a large number of which are found in this particular health industry. The information sought in the following survey questionnaire is to:

1. Determine the greatest number of occupational needs to be served by an educational training facility.

2. Determine an anticipated group of occupations which may develop in the industry in the near future, and so to provide the workers for the anticipated job market.

You will note that there is an apparently overwhelming list of job categories. To avoid this overwhelming reaction on the part of the nursing home facility operator, it is felt that he should be assured that this list encompasses those in the most ideal of circumstances as noted in column four. Perhaps, rather than serving as just a tabulation, this will aid the operator in thinking for a moment of his anticipated needs.

Part of the difficulty that is encountered by the operators of the convalescent facilities is the turmoil, momentarily we all hope, that interferes with the planning in the necessary adjustment to Medicare and Medicaid. The interviewer should be aware of this prejudice.

It is our hope that this survey will furnish you that information about the present job market in these facilities that you can use.

Very truly yours,

Joe L. Lipscomb, M.D.
Director

JL/bj

Enclosures

NURSING HOME SUMMARY SHEET

NURSING HOME:____________________ CITY, COUNTY, STATE:____________________ DATE:_____

BEDS (TOTAL NUMBER)_______ BEDS, (EXTENDED CARE)__________ BEDS, (ATTENDANT CARE)____

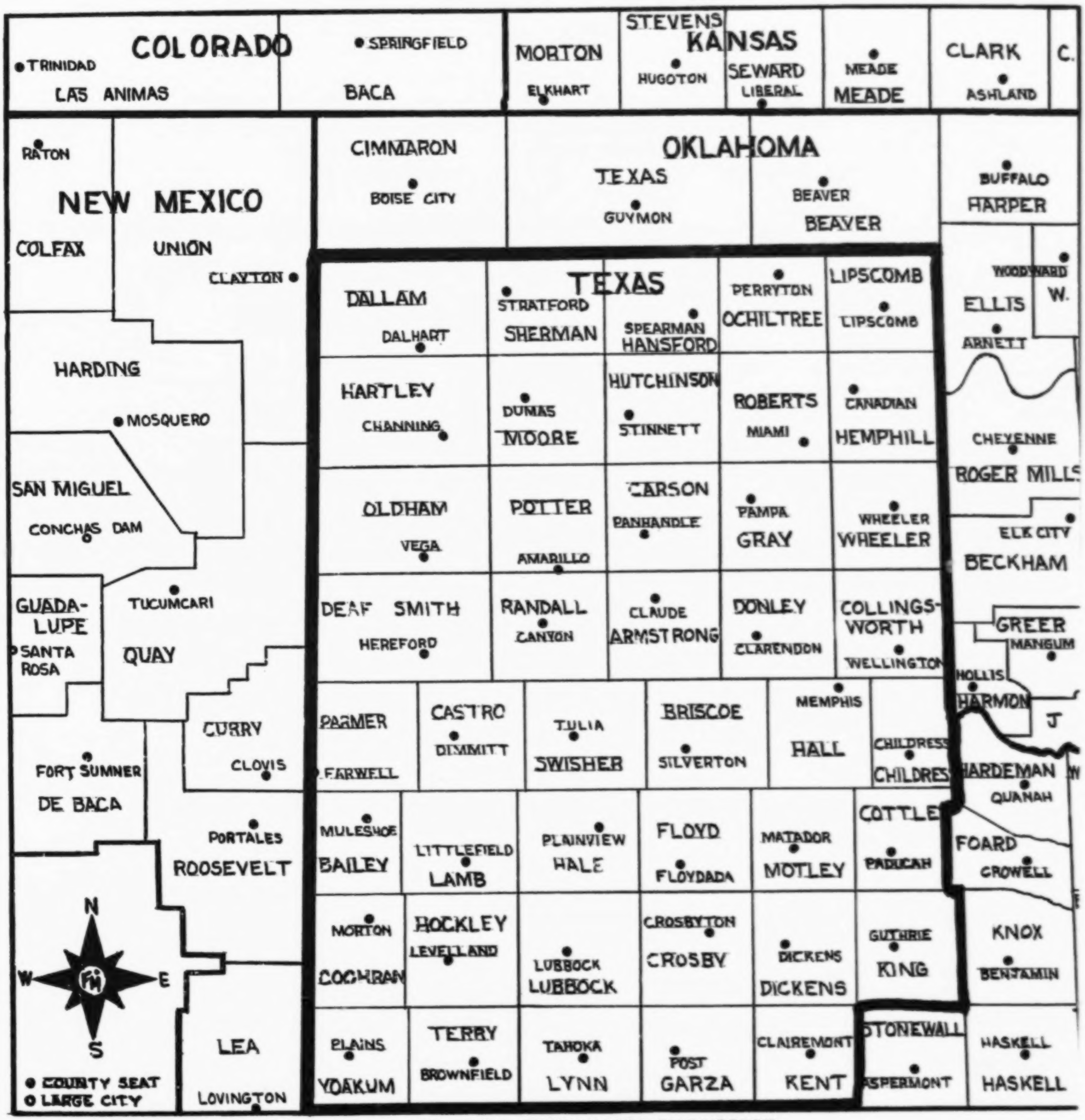
The trained health care worker generally becomes a person who requires less supervision and provides higher productivity on-the-job because he understands his job better and provides more efficient and effective patient care. Listed below are a number of job classifications. In order to determine present and future personnel needs, please fill out each of the four columns.

	(1) Present # Employees	(2) Present # Vacancies	(3) # you anticipate in 12 months	(4) # you would employ if economically feasible and available
ADMINISTRATOR	_____	_____	_____	_____
MEDICAL RECORDS CLERK	_____	_____	_____	_____
CLERK, TYPIST	_____	_____	_____	_____
R.N.	_____	_____	_____	_____
L.V.N. or L.P.N.	_____	_____	_____	_____
NURSE AIDE	_____	_____	_____	_____
ORDERLY	_____	_____	_____	_____
HOUSEKEEPER	_____	_____	_____	_____
MAID	_____	_____	_____	_____
COOK	_____	_____	_____	_____
DIETARY AIDE	_____	_____	_____	_____
DISHWASHER	_____	_____	_____	_____
JANITOR	_____	_____	_____	_____
PHYSICAL THERAPIST	_____	_____	_____	_____
OCCUPATIONAL THERAPIST	_____	_____	_____	_____
DIETICIAN	_____	_____	_____	_____
LABORATORY	_____	_____	_____	_____
OTHER:	_____	_____	_____	_____

COMMENTS: ____

____

FIGURE 4. AMARILLO MEDICAL REFERRAL AREA
NURSING HOME SURVEY--DECEMBER 1, 1967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HUGOTON
SEWARD
LIBERAL
MEADE
MEADE
CLARK
ASHLAND
C.
RATON
NEW MEXICO
COLFAX
UNION
CLAYTON
CIMMARON
BOISE CITY
OKLAHOMA
TEXAS
GUYMON
BEAVER
BEAVER
BUFFALO
HARPER
TEXAS
DALLAM
DALHART
STRATFORD
SHERMAN
SPEARMAN
HANSFORD
PERRYTON
OCHILTREE
LIPSCOMB
LIPSCOMB
WOODWARD
W.
ELLIS
ARNETT
HARDING
MOSQUERO
HARTLEY
CHANNING
DUMAS
MOORE
HUTCHINSON
STINNETT
ROBERTS
MIAMI
CANADIAN
HEMPHILL
CHEYENNE
ROGER MILLS
SAN MIGUEL
CONCHAS DAM
OLDHAM
VEGA
POTTER
AMARILLO
CARSON
PANHANDLE
PAMPA
GRAY
WHEELER
WHEELER
ELK CITY
BECKHAM
GUADA-LUPE
SANTA ROSA
TUCUMCARI
QUAY
DEAF SMITH
HEREFORD
RANDALL
CANYON
CLAUDE
ARMSTRONG
DONLEY
CLARENDON
COLLINGS-WORTH
WELLINGTON
GREER
MANGUM
HOLLIS
HARMON
CURRY
CLOVIS
PARMER
FARWELL
CASTRO
DIMMITT
TULIA
SWISHER
BRISCOE
SILVERTON
MEMPHIS
HALL
CHILDRESS
CHILDRESS
J
HARDEMAN
QUANAH
FORT SUMNER
DE BACA
PORTALES
ROOSEVELT
MULESHOE
BAILEY
LITTLEFIELD
LAMB
PLAINVIEW
HALE
FLOYD
FLOYDADA
MATADOR
MOTLEY
COTTLE
PADUCAH
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COCHRAN
HOCKLEY
LEVELLAND
LUBBOCK
LUBBOCK
CROSBYTON
CROSBY
DICKENS
DICKENS
GUTHRIE
KING
KNOX
BENJAMIN
LEA
LOVINGTON
PLAINS
YOAKUM
TERRY
BROWNFIELD
TAHOKA
LYNN
POST
GARZA
CLAIREMONT
KENT
STONEWALL
ASPERMONT
HASKELL
HASKELL
● COUNTY SEAT
○ LARGE CITY

AREA SURVEYED--AMARILLO DISTRICT OF TEXAS EMPLOYMENT COMMISSION:

Number of Employment	1,049
Number of vacancies	49
Number of additional employees anticipated in 12 months	373

Expected increase in employees---12 months---35%

December, 1967

NURSING HOME SUMMARY----------FINAL TOTALS----

Total Beds. . . . 1,696 (Extended Care Beds--568,Attendant Care Beds--591, Undefined Beds--536)

Occupational Title	Present Employees		Present Vacancies	Anticipated in 12 months	Employ if Economically Feasible and Available
	Number	Percent of total			
Administrator	44	4	2	7	2
Medical Records Clerk	6	1	2	5	8
Clerk, Typist	21	2	0	7	3
R.N.	35	3	6	15	18
L. V. N. or L. P. N	161	15	18	56	45
Nurse Aide	475	45	7	147	81
Orderly	21	2	3	14	18
Housekeeper	37	4	0	12	9
Maid	31	3	1	18	9
Cook	94	8	1	24	15
Dietary Aide	26	3	1	18	16
Dishwasher	30	2	1	8	5
Janitor	33	3	0	15	13
Physical Therapist	6	1	3	0	14
Occupational Therapist	2	1	4	6	10
Dietician	17	1	1	9	10
Laboratory	2	1	0	1	1
Other	8	1	0	2	2
TOTALS	1,049	100%	49	373	279

School of Health Occupations Proposal
P.O. Box 447
November 7, 1967

Dear Sir:

Amarillo College, at the request of the Amarillo Area Foundation and with the cooperation of the Texas Education Agency, is planning a School of Health Occupations for the training of semi-professional paramedical personnel to serve the geographical area of which it is the central community.

At the 15th of November meeting of the Panhandle District of the Texas Hospital Association, it will be our pleasure to submit to the administrators and their associates a plan for a school of health occupations. It is our wish to secure from the administrators a statement of their needs for personnel which they feel that we may be able to help supply. Mrs. Geraldine Wallace, my associate, and I have already had an opportunity for personal discussion with many of the administrators.

The Panhandle District of the T.H.A. doesn't encompass all of the geographical area that includes the counties which we might be able to serve; consequently, it is hoped that administrators from hospitals close by can attend. Sister Thomasine is kind enough to prepare buffet for those attending as our guests. The meeting will be held at St. Anthony's Hospital at 12:00 noon.

If you can possibly attend, please state on the enclosed post card the number of persons from your hospital for us to plan for.

Very truly yours,

Joe L Lipscomb

Joe L. Lipscomb, M.D.

JL/bj

Enclosure

School of Health Occupations Proposal
P.O. Box 447
November 15, 1967

Dear Sir:

To you administrators who were able to accept our invitation to the regular meeting of the Panhandle Division of District I of theTexas Hospital Association meeting at St. Anthony's today, we thank you for your interest, criticism, and participation onour plan for the School of Health Occupations. To those of you who could not attend for various reasons, we appreciate your continued interest in helping us help solve your personnel needs.

The survey sheet marked "Hospital Employee" questionnaire will give the actual employee situation in your hsopital. There is one sheet for each employee in the semi-professional occupations that are listed. The social security number is a computer code number. The name of the employee is not really necessary, but will aid in preventing errors between individuals when givenwith the social security number. The hospital, its type, its bed number, and its laboratory and x-ray procedures will be the same on all. There should be one check only for an employee's main job designation. There is liklihood of several checks for an employee's actual duties, depending on the size of the hsopital. Another way of determining this differentiation is that if your employee spends 50% or more of his working time on one job designation, this would be marked "main" job. The secondary duties may be multiple. The true shortages then can be determined with correlation to the second, or "summary sheet."

The single sheet report for each hospital or "summary" sheet is designed to give a statement of the ideal or fully staffed fully qualified personnel that if it were possible for you to do so that you would have at present. It also gives you in the second column your projection under the same ideal or fully staffed hospital in 1970.

The E.E.G. technician is conceived in the field of the electrocardiograph technician duties. The bio-medical technician (instrument maintenance and repair) is not listed, for to our knowledge, in our area, no hospital emoloys such a person except as consultation. We have found that it is within probability and possibility for such training to be given in our school. On the back of the summary sheet, give these remarks if you could use such a person as a hospital employee.

All reports are requested to be returned by December 1, 1967. If more forms are necessary, please drop us a card. Thank you.

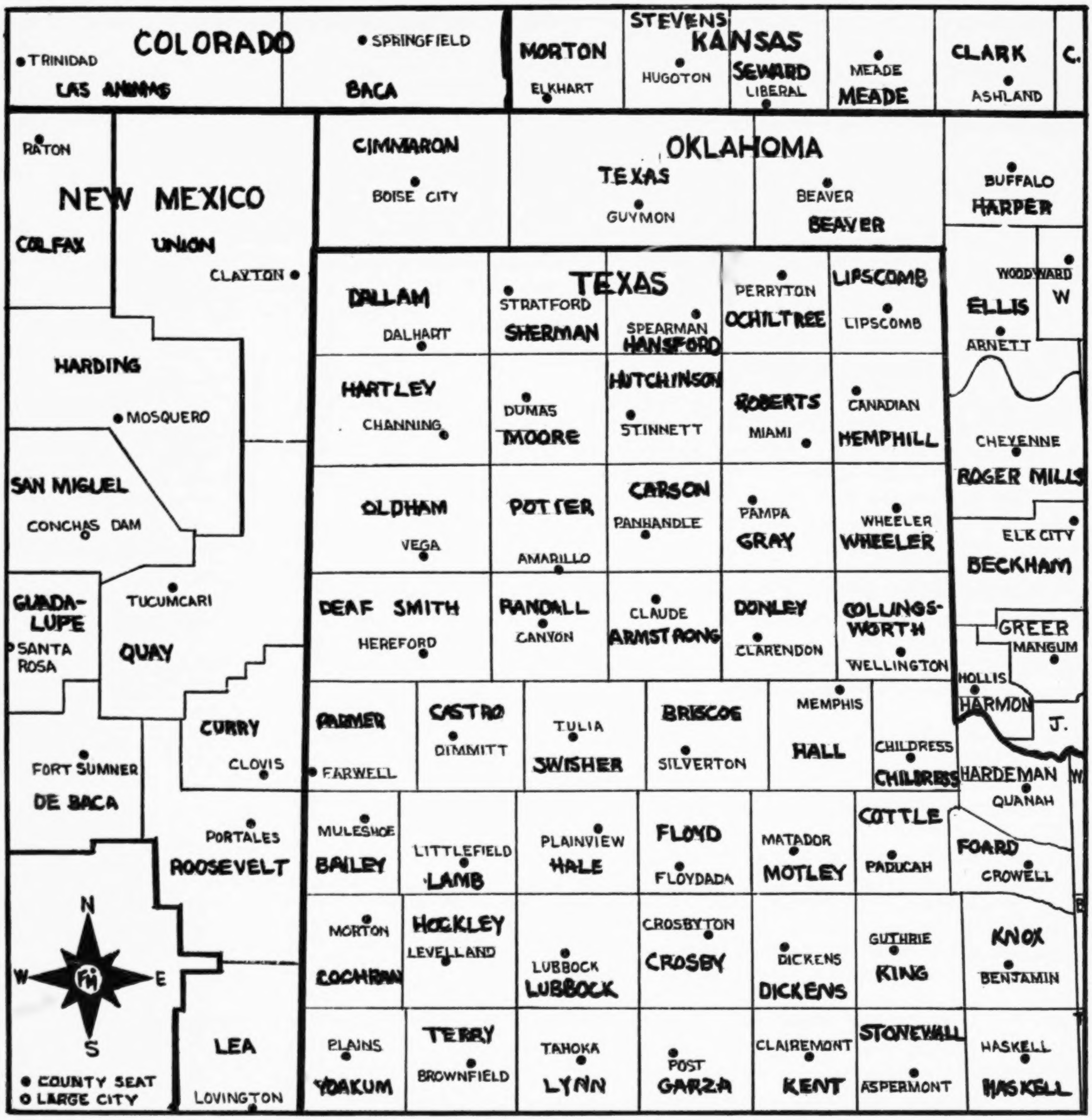
Very truly yours,

Joe L. Lipscomb

Joe L. Lipscomb, M.D.
Director

JLL/bj

FIGURE 5. AMARILLO MEDICAL REFERRAL AREA
SELECTED HOSPITAL PERSONNEL SURVEY
DECEMBER 1, 1967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SPRINGFIELD
BACA
MORTON
ELKHART
STEVENS
KANSAS
HUGOTON
SEWARD
LIBERAL
MEADE
MEADE
CLARK
ASHLAND
C.
RATON
NEW MEXICO
COLFAX
UNION
CLAYTON
CIMMARON
BOISE CITY
OKLAHOMA
TEXAS
GUYMON
BEAVER
BEAVER
BUFFALO
HARPER
TEXAS
DALLAM
DALHART
STRATFORD
SHERMAN
SPEARMAN
HANSFORD
PERRYTON
OCHILTREE
LIPSCOMB
LIPSCOMB
WOODWARD
W
ELLIS
ARNETT
HARDING
MOSQUERO
HARTLEY
CHANNING
DUMAS
MOORE
HUTCHINSON
STINNETT
ROBERTS
MIAMI
CANADIAN
HEMPHILL
CHEYENNE
ROGER MILLS
SAN MIGUEL
CONCHAS DAM
OLDHAM
VEGA
POTTER
AMARILLO
CARSON
PANHANDLE
PAMPA
GRAY
WHEELER
WHEELER
ELK CITY
BECKHAM
GUADA-LUPE
SANTA ROSA
TUCUMCARI
QUAY
DEAF SMITH
HEREFORD
RANDALL
CANYON
CLAUDE
ARMSTRONG
DONLEY
CLARENDON
COLLINGS-WORTH
WELLINGTON
GREER
MANGUM
HOLLIS
HARMON
J.
CURRY
CLOVIS
FORT SUMNER
DE BACA
PARMER
FARWELL
CASTRO
DIMMITT
TULIA
SWISHER
BRISCOE
SILVERTON
MEMPHIS
HALL
CHILDRESS
CHILDRESS
HARDEMAN
QUANAH
W
PORTALES
ROOSEVELT
MULESHOE
BAILEY
LITTLEFIELD
LAMB
PLAINVIEW
HALE
FLOYD
FLOYDADA
MATADOR
MOTLEY
COTTLE
PADUCAH
FOARD
CROWELL
N
W
E
S
MORTON
COCHRAN
HOCKLEY
LEVELLAND
LUBBOCK
LUBBOCK
CROSBYTON
CROSBY
DICKENS
DICKENS
GUTHRIE
KING
KNOX
BENJAMIN
LEA
LOVINGTON
PLAINS
YOAKUM
TERRY
BROWNFIELD
TAHOKA
LYNN
POST
GARZA
CLAIREMONT
KENT
STONEWALL
ASPERMONT
HASKELL
HASKELL
● COUNTY SEAT
○ LARGE CITY

AREA SURVEY - PANHANDLE DIVISION OF DISTRICT I OF THE TEXAS HOSPITAL ASSOCIATION PLUS BORDER COUNTIES OF NEW MEXICO, KANSAS, AND OKLAHOMA.

Total Number of Beds	1689*
Total Number of selected personnel	359
Additional needs-selected personnel	202

*63% response to questionnaire

HOSPITAL EMPLOYEE QUESTIONNAIRE

HOSPITAL: ______________ TYPE: (GENERAL, SPECIAL)____________________# BEDS:_______

CITY, COUNTY, STATE:________________________________# DISCHARGES PER YR.:__________

LAB. PROCEDURES PER YR.: __________# X-RAY PROCEDURES PER YEAR:_______________

EMPLOYEE (NAME):______________________ SOCIAL SECURITY NUMBER:________________

PART-TME: _______ FULL TIME:__________ SALARY PER MONTH:__________________

MEDICAL RECORDS ADMINISTRATION

	MAIN	SECOND
MEDICAL RECORDS LIBRARIAN, RRL	☐	☐
MEDICAL RECORDS, CONSULTING, RRL	☐	☐
MEDICAL RECORDS TECH. ART	☐	☐
CLASSIFICATION CLERK	☐	☐
STATISTICAL CLERK	☐	☐
CODE AND INDEX CLERK	☐	☐
ADMITTING CLERK	☐	☐
MEDICAL SECRETARY	☐	☐
MEDICAL STENOGRAPHER	☐	☐
MEDICAL TRANSCRIPTIONIST	☐	☐
INSURANCE CLERK	☐	☐

NURSING

WARD MANAGER	☐	☐
SURGICAL TECH. L.V.N. (scrub nurse)	☐	☐

LABORATORY

	MAIN	SECOND
DIRECTOR OF LABORATORY		
1. PATHOLOGIST	☐	☐
2. TECHNOLOGIST	☐	☐
LAB. TECH.		
1. MT (ASCP)	☐	☐
2. AMT	☐	☐
LAB. ASSISTANT		
1. CLA	☐	☐
2. NON-CERTIFIED	☐	☐
STUDENT TECH. (goal, ASCP)	☐	☐
STUDENT TECH. (goal, CLA)	☐	☐
CYTOTECHNOLOGIST	☐	☐
HISTOTECHNOLOGIST	☐	☐

RADIOLOGY

RADIOLOGIST (RESIDENT)	☐	☐

MEDICAL TRANSCRIPTIONIST ☐ ☐

INSURANCE CLERK ☐ ☐

NURSING

WARD MANAGER ☐ ☐

L.V.N.

SURGICAL TECH. (scrub nurse) ☐ ☐

OCCUPATIONAL THERAPY

OCCUPATIONAL THERAPIST, ORT ☐ ☐

OCCUPATIONAL THERAPIST, CONSULT. ☐ ☐

OCCUPATIONAL THERAPY ASS'T, COTA (non-cert) ☐ ☐

MENTAL HEALTH ASS'T ☐ ☐

INHALATION THERAPY

INHALATION THERAPIST (cert.) ☐ ☐

INHALATION THERAPY ASS'T (non-cert.) ☐ ☐

HOUSEKEEPING SERVICES

HOUSEKEEPING SUPERVISOR ☐ ☐

STUDENT TECH. (goal, ASCP) ☐ ☐

STUDENT TECH. (goal, CLA) ☐ ☐

CYTOTECHNOLOGIST ☐ ☐

HISTOTECHNOLOGIST ☐ ☐

RADIOLOGY

RADIOLOGIST (RESIDENT) ☐ ☐

RADIOLOGIST (CONSULTING) ☐ ☐

X-RAY TECH. RT ☐ ☐

STUDENT X-RAY TECH. ☐ ☐

E.K.G. TECH. ☐ ☐

PHYSICAL THERAPY

PHYSICAL THERAPIST ☐ ☐

PHYSICAL THERAPIST, (Consult) ☐ ☐

PHYSICAL THERAPY ASS'T ☐ ☐

PHYSICAL THERAPY ASS'T (non-cert., e.g.,orderly) ☐ ☐

FOOD SERVICE

DIETICIAN (RESIDENT) ☐ ☐

DIETICIAN (CONSULTING) ☐ ☐

FOOD SERVICE SUPERVISOR ☐ ☐

FOOD SERVICE ASS'T ☐ ☐

HOSPITAL SUMMARY SHEET (PERSONNEL NEEDS)

HOSPITAL:____________________ CITY, COUNTY, STATE:__________________________________

The trained health care worker generally becomes a person who requires less supervision and provides higher productivity on-the-job because he understands his hob better and provides more efficient and effective patient care.

Listed below are a number of job classifications. In the first column, give the number you would employ now, if available. In the second column, give the number of employees you anticipate by 1970.

MEDICAL RECORDS ADMINISTRATION

	present	1970
MEDICAL RECORDS LIBRARIAN, MRL	______	______
MEDICAL RECORDS, CONSULTING MRL	______	______
MEDICAL RECORDS TECH. MRT	______	______
CLASSIFICATION CLERK	______	______
STATISTICAL CLERK	______	______
CODE AND INDEX CLERK	______	______
ADMITTING CLERK	______	______
MEDICAL SECRETARY	______	______
MEDICAL STENOGRAPHER	______	______
MEDICAL TRANSCRIPTIONIST	______	______
INSURANCE CLERK	______	______

NURSING

R.N.	______	______
A.D.	______	______
L.V.N.	______	______
WARD MANAGER		

LABORATORY

	present	1970
DIRECTOR OF LABORATORY		
1. PATHOLOGIST	______	______
2. TECHNOLOGIST	______	______
LAB. TECH.		
1. MT (ASCP)	______	______
2. AMT	______	______
LAB. ASSISTANT		
1. CLA	______	______
2. NON-CERTIFIED	______	______
STUDENT TECH. (goal,ASCP)	______	______
STUDENT TECH. (goal, CLA)	______	______
CYTOTECHNOLOGIST	______	______
HISTOTECHNOLOGIST	______	______

RADIOLOGY

RADIOLOGIST (RESIDENT)		

MEDICAL TRANSCRIPTIONIST ______ ______

INSURANCE CLERK ______ ______

NURSING

R.N. ______ ______

A.D. ______ ______

L.V.N. ______ ______

WARD MANAGER ______ ______

LVN
SURGICAL TECH. (scrub nurse) ______ ______

OCCUPATIONAL THERAPY

OCCUPATIONAL THERAPIST, ORT ______ ______

OCCUPATIONAL THERAPIST, CONSULT.______ ______

OCCUPATIONAL THERAPY ASS'T. COTA______ ______

INHALATION THERAPY

INHALATION THERAPIST (Cert.) ______ ______

INHALATION THERAPY ASS'T (non-cert.) ______ ______

HOUSEKEEPING SERVICES

HOUSEKEEPING SUPERVISOR ______ ______

STUDENT TECH. (goal,ASCP)______ ______

STUDENT TECH. (goal, CLA)______ ______

CYTOTECHNOLOGIST ______ ______

HISTOTECHNOLOGIST ______ ______

RADIOLOGY

RADIOLOGIST (RESIDENT) ______ ______

RADIOLOGIST (CONSULTING) ______ ______

X-RAY TECH. RT. ______ ______

STUDENT X-RAY TECH. ______ ______

E.K.G. TECH. ______ ______

PHYSICAL THERAPY

PHYSICAL THERAPIST ______ ______

PHYSICAL THERAPIST, (consult.) ______ ______

PHYSICAL THERAPY ASS'T ______ ______

PHYSICAL THERAPY ASS'T ______ ______

FOOD SERVICE

DIETICIAN (RESIDENT) ______ ______

DIETICIAN (CONSULTING) ______ ______

DIETICIAN (RESIDENT) ______ ______

FOOD SERVICE SUPERVISOR ______ ______

FOOD SERVICE ASS'T ______ ______

TABLE 7

AMARILLO REGION SELECTED HOSPITAL PERSONNEL, NOVEMBER, 1967

RESPONSE TO SURVEY

CATEGORY	MAILED	RECEIVED NUMBER	RECEIVED PER CENT
BY OWNERSHIP			
Federal	1	1	100.0
Governmental Nonfederal	22	9	40.9
Voluntary nonprofit	10	3	30.0
Propriertory for - profit	2	0	0.0
BY SERVICE			
Short-Term general	35	13	37.1
Long-term general			
Psychiatric			
Tuberculosis			
Chronic-Convalescent			
All other			
BY SIZE			
Under 25 Beds	3	0	0.0
25-49	17	3	17.6
50-99	7	3	42.8
100-199	6	6	100.0
200-299	1	1	100.0
300-399	1	1	100.0
400-over	0	0	0.0

TABLE 8
AMARILLO MEDICAL REFERRAL AREA
SELECTED PERSONNEL NEEDS IN HOSPITALS
DECEMBER, 1967

Total hospitals reporting--14
Total Beds--1,689

JOB TITLE	PRESENT STAFF	ADDITIONAL NEEDS	% of Total	ESTIMATED NEEDS (1970)	% of Total
Total professional and Technical.	1124	203	18	1827	62
MEDICAL RECORD ADMINISTRATION					
Medical Records Librarian, RRL .	4	4		10	
Medical Records, Consulting, RRL	0	1		1	
Medical Records, Tech. ART . . .	5	8		19	
Admitting Clerk.	16	4		31	
Medical Secreatary.	14	0		21	
Medical Stenographer	11	1		20	
Medical Transcriptionist	1	6		8	
Insurance Clerk.	17	2		25	
Office--Clerical	11	1		18	
NURSING					
R.N..	410	55		592	
A.D.	2	3		5	
L.V.N.	373	42		572	
Ward Manager	2	7		24	
Surgical Tech. - L.V.N.	31	0		36	
OCCUPATIONAL THERAPY					
Occupational Therapist, ORT. . .	1	1		8	
Occupational Therapist, Consult.	0	0		0	
Occupational Therapy Asst. COTA.	2	0		5	
Psychiatric Aide	33	0		33	
INHALATION THERAPY					
Inhalation Therapist - CERT. . .	4	0		10	
Inhalation Therapy Asst. Non-Cert	5	9		26	
HOUSEKEEPING SERVICES					
Housekeeping Supervisor.	14	0		20	

SELECTED PERSONNEL NEEDS IN HOSPITALS, December 1, 1967

JOB TITLE	PRESENT STAFF	ADDITIONAL NEEDS	ESTIMATED NEEDS 1970
LABORATORY DIRECTOR OF LABORATORY			
Pathologist	0	5	9
Technologist	8	0	8
LAB. TECH.			
MT--ASCP	19	2	35
AMT	15	6	24
LAB. ASSISTANT			
CLA	4	1	9
Non-Certified	5	1	11
Student Tech. GOAL - ASCP	3	1	9
Student Tech. GOAL - CLA	5	3	12
Cytotechnologist	0	0	0
Histotechnologist	3	0	5
RADIOLOGY			
Radiologist - Resident	1	6	10
Radiologist - Consulting	0	2	3
X-Ray Tech. RT	29	6	45
Student X-Ray Tech.	8	15	27
E.K.G. Tech.	4	0	10
PHYSICAL THERAPY			
Physical Therapist	3	4	9
Physical Therapist - Consult	1	0	1
Physical Therapist Assistant	4	0	5
Physical Therapy Asst. Non-Cert.	1	2	10
FOOD SERVICE			
Dietician - Resident	10	0	12
Dietician - Consulting	1	3	4
Food Service Supervisor	6	2	9
Food Service Assistant	38	6	76

TABLE 8.1

PERSONNEL IN HOSPITALS (1)
PRESENT STAFF: APRIL, 1966

TEXAS

CATEGORY OF PERSONNEL	PRESENT STAFF			ADDITIONAL NEEDS	
	Total	Full-Time	Part-Time	Number	% of Total
ALL CATEGORIES -- TOTAL	15,412	13,531	1,881	1,696	11%
SELECTED PROFESSIONAL & TECHNICAL					
Nursing Services					
Surgical Technical Aide	1,051	870	181	283	
Diagnostic Services					
Medical Technologits	2,075	1,687	388	447	
Laboratory assistants	753	635	118	92	
Cytotechnologists	40	38	2	19	
Histologic Technicians	144	138	6	47	
Therapeutic Services					
Occupational Therapists	129	103	26	57	
Occupational Therapy Asst.	135	111	24	33	
Physical Therapist	286	242	44	84	
Physical Therapy Asst.	205	184	21	39	
Inhalation Therapists	374	315	59	156	
Radiology					
Radiologic Technologist	1,062	981	81	165	
Medical Records					
Medical Record Librarians	285	240	45	120	
Medical Record Assistants	432	400	32	96	
Dietary					
Food Service Manager	248	220	28	58	
Other Hospital Personnel					
Food Service Workers	8,193	7,367	826	-----	

Selected Health Personnel from Table compiled for
(1) Manpower Resources in Hospital--1966, American Hospital Associaton.

Appendix
TABLE 8.2
PERSONNEL NEEDS IN HOSPITALS: 1966 and 1975

CATEGORY OF PERSONNEL	Staff 1966	ADDITIONAL NEEDS	Percent Additional	ESTIMATED NEEDS 1975
Total professional and technical.	1,332,100	257,200	19	2,034,300
Nursing Service:				
Nurse--R.N.	361,000	79,500	22	563,800
Licensed practical nurse . .	150,600	41,400	27	245,800
Surgical technician.	17,600	3,900	22	27,500
Aide, Orderly (except in psychiatric hospitals) . .	374,400	51,300	14	544,900
Aide, Orderly (in psychiatric hospitals)	117,600	18,500	16	174,200
Diagnostic services:				
Medical technologist	54,500	9,200	17	81,500
Laboratory assistant	14,600	2,500	17	21,900
Cytotechnologist	1,600	500	31	2,700
Histologic technician. . . .	3,900	700	18	5,900
Electrocardiograph technician	5,900	800	14	8,600
Therapeutic services:				
Occupational therapist . . .	4,100	2,300	56	8,200
Occupational therapy assistant	3,800	1,200	32	6,400
Physical therapist	8,500	2,900	34	14,600
Physical therapy assistant .	5,200	1,100	21	8,100
Social worker.	10,700	5,100	48	20,200
Social work assistant. . . .	1,500	500	33	2,600
Recreation therapist	3,800	1,600	42	6,900
Inhalation therapist	5,600	2,200	39	10,000
Speech pathologist and audiologist	1,200	500	42	2,200
Radiology:				
Radiologic technologist. . .	24,000	3,900	16	35,700
X-Ray Assistant.	6,000	900	15	8,800
Pharmacy:				
Pharmacist	9,400	1,900	20	14,500
Pharmacy assistant	5,600	900	16	8,300
Medical records:				
Medical record Librarian . .	6,300	1,800	29	10,400
Medical record technician. .	10,100	1,800	18	15,200
Dietary:				
Dietitian.	12,700	3,500	28	20,700
Food Service manager	5,400	800	15	7,900
All other professional and technical.	106,500	16,000	15	156,800

Source: "Manpower Resources in Hospitals--1966." Chicago, American Hospital Association, 1967, 75 pp.

HOSPITAL SUMMARY REPORT
December, 1967

Total Beds - 1,689 Discharges Per Year - 57,236
Lab. Procedures Per Year - 720,217 X-Ray Procedures Per Year - 93,836

	FULL TIME FUNCTIONS		PART TIME FUNCTIONS	
	MAIN	SECONDARY	MAIN	SECONDARY
JOB TITLE				
MEDICAL RECORDS ADMINISTRATION				
Medical Records Librarian, RRL	4		1	
Medical Records Consulting, RRL			1	
Medical Records Tech. ART	6	1		
Classification Clerk	1	7		
Statistical Clerk	5	8	3	
Code and Index Clerk	5	9		
Admitting Clerk	16	7	1	
Medical Secretary	14	7	2	
Medical Stenographer	11	8	3	
Medical Transcriptionist	1	13	1	
Insurance Clerk	18	9	1	
NURSING				
Ward Manager	2		1	
Surgical Tech. - L.V.N.	33		5	
OCCUPATIONAL THERAPY				
Occupational Therapist, ORT	1			
Occupational Therapist, Consult				
Occupational Therapy Asst. COTA	2			
Mental Health Assistant	33		3	
INHALATION THERAPY				
Inhalation Therapist - Cert	4		1	
Inhalation Therapy Asst. Non-Cert	5		2	
HOUSEKEEPING SERVICES				
Housekeeping Supervisor	14	2	2	

JOB TITLE	FULL TIME FUNCTIONS MAIN	FULL TIME FUNCTIONS SECONDARY	PART TIME FUNCTIONS MAIN	PART TIME FUNCTIONS SECONDARY
LABORATORY				
DIRECTOR OF LABORATORY				
Pathologist			1	
Technologist	8			
LAB. TECH.				
MT - ASCP	19	1	6	
AMT	17	1	1	
LAB. ASSISTANT				
CLA	4		6	
Non-Certified	5		6	
Student Tech. GOAL - ASCP	3			
Student Tech. GOAL - CLA	5		1	
Cytotechnologist				
Histotechnologist	3			
RADIOLOGY				
Radiologist - Resident	3			
Radiologist - Consulting				
X-Ray Tech. RT	29	3	3	
Student X-Ray Tech	8	1	1	
E.K.G. Tech	4	9	2	1
PHYSICAL THERAPY				
Physical Therapist	3		2	
Physical Therapist - Consult	1			
Physical Therapy Assistant	4			
Physical Therapy Asst. Non-Cert	1		3	
FOOD SERVICE				
Dietician - Resident	10			
Dietician - Consulting	1		3	
Food Service Supervisor	7	5	2	
Food Service Assistant	50	6	10	

HOSPITAL SALARY DIST. TOTALS
FULL TIME PERSONNEL - MAIN FUNCTION ONLY

JOB TITLE	SALARY RANGES 000-199	200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-699	700-ABOVE	TOTALS
MED. REC. ADMIN.												
MED. REC. LIBRARIAN-RRL					1		1		1	1		4
MED. REC. CONSULT - RRL												0
MED. REC. TECH. ART			1	1			1	1	1			5
CLASSIFICATION CLERK		1										1
STATISTICAL CLERK		1	1	1				2				5
CODE AND INDEX CLERK			2	1	1	1						5
ADMITTING CLERK	2	5	3	3	1	1	1					16
MED. SECRETARY		1	2	2	3	1	4	1				14
MED. STENOGRAPHER				1	7	3						11
MED. TRANSCRIPTIONIST					1							1
INSURANCE CLERK		1	5	4	4	1		2				17
NURSING												
WARD MANAGER						2						2
SURGICAL TECH. LVN		7	12	6	4	2						31
OCCUPATIONAL THERAPY												
OCCUP. THERAPIST - ORT										1		1
OCCUP. THERA. CONSULT												0
OCCUP. THERA. ASST COTA						1	1					2
MENTAL HEALTH ASST		26	7									33
INHALATION THERAPY												
INHALATION THERAPIST					3	1						4
INHALATION THERAPY ASST			4		1							5
HOUSEKEEPING SERVICES												
HOUSE-K. SUPERVISOR		2	4	1	2	1	1	2		1		14
DIRECTOR OF LABORATORY												
PATHOLOGIST												0
TECHNOLOGIST								1	1	1	5	8

HOSPITAL SALARY DIST. TOTALS
FULL TIME PERSONNEL - MAIN FUNCTION ONLY

JOB TITLE	SALARY RANGES 000-199	200-249	250-299	300-349	350-399	400-449	450-499	500-549	550-599	600-699	700-ABOVE
LAB. TECH.											
MT - ASCP					1		1	1	3	11	2
AMT						1	2	5	5		2
LAB. ASSISTANT											
CLA				1	2		1				
NON-CERTIFIED	1		2	2							
STUDENT TECH. - ASCP	2								1		
STUDENT TECH. - CLA	2	2				1					
CYTOTECHNOLOGIST											
HISTOTECHNOLOGIST						2		1			
RADIOLOGY											
RADIOLOGIST RESIDENT											1
RADIOLOGIST CONSULTANT											
X-RAY TECH. RT						10	6	3	6	4	
STUDENT X-RAY TECH	6	1			1						
E.K.G. TECH		1	1	2							
PHYSICAL THERAPY											
PHYSICAL THERAPIST											3
PHY. THERA. CONSULT										1	
PHYSICAL THERA. ASST		2	1					1			
PHY. THER. ASST NON-CERT					1						
FOOD SERVICE											
DIETICIAN RESIDENT							1	1	4	2	2
DIETICIAN CONSULT									1		
FOOD SERV. SUPERVISOR		2	2	2							
FOOD SERV. ASST	4	33	1								

TOTAL - ALL RANGES

HEALTH MANPOWER

National Overview of Present Supply and Needs in Health Manpower

Advances in medical science have produced a vast and satisfying array of services the American public have come to appreciate and to seek. These advances have been accompanied by greater availability of health facilities, by lowering the financial barriers to service, by the growing conviction that adequate health care should be available to all people, and by rising income and educational levels. Hence, there is greater demand for medical care today than is readily available. In providing health services, the critical factor has become health manpower. Even if it were possible to envision the ideal staffing for health services for a community, for a state, or for a whole nation, the continuing development of new knowledge and techniques, new patterns of service, and new methods of payment are all constantly changing the needs for both numbers and varieties of health workers. Therefore, measuring these shortcomings by estimates will provide only directions or trends in supply and needs.[1]

Trends in Supply

In relation to the civilian labor force, persons in the health occupations constituted 3.7 percent (2.8 million persons) in 1966 with a projected increase to 4.3 percent (3.8 million persons) in 1975 (Table 1).

---

[1] Health Manpower Perspective: 1967, U.S. Department of Health, Education, and Welfare Public Health Service, Bureau of Health Manpower, 1967, p. 3.

TABLE I---PERSONS IN THE HEALTH OCCUPATIONS IN RELATION TO THE CIVILIAN LABOR FORCE: 1900-75[1]

Year	Civilian labor force		Percent in health occupations
	Total	In health occupations	
1900	29,030,000	345,000	1.2
1910	37,291,500	500,000	1.3
1920	42,205,700	650,000	1.5
1930	48,684,600	900,000	1.8
1940	51,742,000	1,090,000	2.1
1950	62,208,000	1,440,000	2.3
1960	69,628,000	2,040,000	2.9
1966	75,770,000	2,786,000	3.7
1975	89,083,000	3,800,000	4.3

[1] HEALTH MANPOWER Perspective: 1967, U.S. Department of Health, Education, and Welfare, Public Health Service, Bureau of Health Manpower, 1967, p.5.

Between 1950 and 1966, while the population of the United States increased by 29 percent, the number of workers in the health occupations increased by over 90 percent. The increases were very uneven among occupational categories. In some technologies the increase was double, e.g. medical technologists and radiologic technologists while physicians increased by only 34 percent (Table 2)

TABLE 2---NUMBER OF PERSONS ACTIVE IN SELECTED HEALTH OCCUPATIONS 1950-1966

Occupations	1950	1960	1966
Physicians:			
M.D.	209,000	243,100	285,900
D.O.	12,700	14,200	11,100
Dentist	77,900	89,200	95,400
Dental hygienist.	6,500	11,400	16,000
Dental assistant.	55,000	83,000	95,000
Podiatrist.	6,400	7,600	8,000
Nurse---R.N.	375,000	504,000	640,000
Practical Nurse	137,000	206,000	300,000
Home health aide.	500	(1)	6,000
Medical technologist (2).	13,900	30,000	40,000
Occupational therapist.	2,000	5,000	6,500
Radiologic technologist	30,800	60,000	72,000
Pharmacist.	(1)	117,000	120,000

(1) Data not available

(2) ASCP registered. Hospitals reported 22,000 employed in 1966 who were not ASCP registered

Source: "Health Resources Statistics: Health Manpower, 1965, Public Health Service Pub. No. 1509. Washington, D.C., U.S. Government Printing Office, 1966.

In most of the occupational groups, the increases reflect substantial increases in school capacity. Supply of health workers by level of training, 1966 (Table 3) shows the ratio of the post-high school trained persons to constitute about 20% of the total, those who would conceivably be trained in community college programs. About 25% of the total require short training, those who would be trained in vocational short-courses.

TABLE 3---SUPPLY OF HEALTH WORKERS, BY LEVEL OF TRAINING (U.S.)

Level of training and occupation	Number of persons
Total	2,786,200
Physician, dentist, other doctoral level	442,400
Physician (M.D. and D.O.)	297,000
Dentist	95,400
Optometrist	17,000
Podiatrist	8,000
Other	25,000
Nurse (baccalaureate, diploma, associate degree)	640,000
Other occupations which may have baccalaureate or post-baccalaureate preparation	422,000
Dental Hygienist	16,000
Medical record librarian	12,000
Medical technologist	40,000
Occupational therapist	6,500
Physical therapist	12,500
Speech pathologist and audiologist	13,000
Radiologic technologist	72,000
Pharmacist	120,000
Other	130,000
Other 1-3-year post-high school	531,800
Certified laboratory assistant	1,500
Cytotechnologist	3,300
Dental assistant	95,000
Dental laboratory technician	27,000
Inhalation therapist	5,000
Practical nurse	300,000
Other	100,000
Short training	750,000

2) Health Manpower Perspective: 1967, U.S. Department of Health, Education, and Welfare, Public Health Service, Bureau of Health Manpower, 1967, p.6.

Needs for Health Manpower

Many social, economic, and technological factors affect demands for health services. Population growth and change in age composition are significant. The fifteen years from 1965 to 1980 are expected to bring an increase of 50 million in the Nation's population, including five million more people over 65 years old and two million more babies. The following tabulation shows some of the significant demographic changes that are anticipated.

	IN THOUSANDS		
	1965	1975	1980
Total Population	194,600	223,800	243,300
Births per year	3,800	5,300	6,000
Number of children under 15	59,900	65,300	72,800
Number of persons 65 and older	18,200	21,200	23,100

These population increases will bring substantial increase in needs. The 65-and-over age group, according to the National Health Survey, receives twice as much service from physician as the total population and uses over twice as many days of hospital care annually as the total population.[2] Estimates of current and future shortages of manpower to meet the needs is best stated by Fein in a recent publication.[3] He estimates that, between 1965 and 1975, population growth; changes in the age, sex, and social distribution of the population; urbanization; and migration might together raise total demand for medical services by 13.9 to 16.3 percent. He estimates further that rising levels of income and education might add another 7.0 to 7.5 percent to demand; and Medicare another 1 or 2 percent. The total increase in demand from all of these factors is placed at 22 to 26 percent.

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[2] Ibid., p. 7.

[3] Fein, Rashi, The Doctor Shortage, An Economic Diagnosis. Washington, The Brookings Institution, May, 1967.

In summary, the supply of health manpower has increased sharply in recent years. Despite the great increases, demands for health services continue to outstrip the capacity to deliver services. The present outlook is that, in response to these demands, the supply will increase at an accelerated rate in the decade ahead. The greatest challenge will be to meet the needs for professional and technical workers, and for leaders and teachers. It is in these groups that increases are the most expensive, the slowest, and the most difficult to achieve.[4]

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[4] HEALTH MANPOWER Perspective: 1967, U.S. Department of Health, Education, and Welfare, Public Health Service Bureau of Health Manpower, 1967, p. 15.

AMARILLO

OVERALL ESTIMATE OF HEALTH PERSONNEL NEEDS

For those persons from outside the health industry or who are making first inquiry into the problems of semi-professional health occupation needs and health occupation education, this overview chart is included for perusal. A quick glance at each occupation and its needs in the Amarillo Health Service Area immediately identifies the most glaring needs. This could conceivably apply with minor adaptation to any other community of like size and similar situation.

HEALTH OCCUPATIONS

	ACUTE SHORTAGE	MUST MAINTAIN SUPPLY & DEMAND	ACUTE SHORTAGE LIMITED NUMBER NEEDED
BIO-MEDICAL ENGINEERING TECHNICIAN. (Equipment).			X
CERTIFIED LABORATORY ASSISTANT (CLA)		X	
DENTAL ASSISTANT.	X		
DENTAL HYGIENIST.	X		
DENTAL LABORATORY TECHNICIAN. . .		X	
ECHO TECHNICIAN			X
ELECTROCARDIOGRAPHY TECHNICIAN. .		X	
ELECTROENCEPHALOGRAPHY TECHNICIAN			X
HOME HEALTH AID/HOMEMAKER	X		
HISTOLOGIC TECHNICIAN		X	
HOSPITAL FOOD SERVICE SUPERVISOR		X	
HOSPITAL FOOD SERVICE WORKER. . .		X	
HOUSEKEEPING SUPERVISOR		X	
INHALATION THERAPIST.	X		
LICENSED VOCATIONAL NURSE	X		
MEDICAL OFFICE ASSISTANT			
(ADMINISTRATIVE-SECRETARIAL). .	X		
(CLINICAL).		X	
MEDICAL RECORD TECHNICIAN (ART) .	X		
MENTAL HEALTH ASSOCIATE			X
NURSE AIDE.		X	

	ACUTE SHORTAGE	MUST MAINTAIN SUPPLY & DEMAND	ACUTE SHORTAGE LIMITED NUMBER NEEDED
OCCUPATIONAL THERAPY ASSISTANT			X
OPTICIAN			
(DISPENSING)		X	
(MANUFACTURING)		X	
ORDERLY		X	
ORTHOPIST		X	
PHYSICAL THERAPY ASSISTANT			X
PROSTHETIST & ORTHOTIST		X	
PSYCHIATRIC AIDE		X	
RADIOLOGIC TECHNOLOGIST		X	
SURGICAL TECHNICIAN			X
TECHNICAL NURSE (A.D.)	X		
WARD CLERK		X	
WARD MANAGER	X		

APPENDIX
ADVISORY COMMITTEES

1. Steering Committee

Chairman, W.E. Laur, M.D.
Dr. A.B. Martin, President of Amarillo College
Tom Duke, M.D., President of Potter-Randall Medical Society
Mr. F.S. Walters, Administrator, Northwest Texas Hospital
Sister Thomasine, Administrator, St. Anthony Hospital
Dr. C.L. Womack, Administrator, Veterans Hospital
Mr. Emmett Johnson, Administrator, High Plains Baptist Hospital
Mrs. Katherine Wilson, Community lay-leader

Chairmen of advisory committee, including A.D. Nursing and L.V.N. Nursing:

Mrs. Lorena Loper, RRL, Medical Records Science Administration, Northwest Texas Hospital
D.J. Fong, D.D.S.
Jaime Quintanilla, M.D., Director of Kilgore Children Psychiatric Center
Robert Brierty, M.D., Pathologist
William Dunnagan, M.D. Radiologist
Dr. Lucille Lynn, Chairman of Department of English
Dr. William Raab, Dean of College, Co-chairman of Curriculum Committee

2. Medical Records Science Administration

Chairman, Mrs. Lorena Loper, RRL
Mrs. Willa Risdon, RRL, Amarillo Air Force Base Hospital
Mrs. Allene McNew, ART, St. Anthony Hospital
Dewey W. Yeager, M.D.
Mrs. Edena Cobb, Department of Business Administration, Amarillo College

3. Dental Assisting

Chairman, D.J. Fong, D.D.S.
William Richey, D.D.S.
Wes Makeing, D.D.S.
Barbara Daly, Dental Assistant

4. Mental Health Associate

Chairman, Jaime Quintanilla, M.D.
William E. Raab, Dean of the College, Amarillo College

5. Medical Laboratory Assistant

Chairman, Robert Brierty, M.D., Pathologist
Ralph Zientek, M.D., Pathologist
Adele Barnes, Chairman of Biological Sciences, Amarillo College
Charlotte Rolando, MT(ASCP), St. Anthony Hospital
Betty DeArmond, MT(ASCP), St. Anthony Hospital
Celista Hudspeth, MT(ASCP), B.S., Northwest Texas Hospital

6. Radiological Technology

Chairman, William Dunnagan, M.D., Radiologist
Bill Crawford, RT, St. Anthony Hospital
Gary Rutz, RT, High Plains Baptist Hospital
W.D. Yeary, RT, Northwest Texas Hospital
Sister Francesca, RT, B.S., St. Anthony Hospital
Wilbur H. Team, Physics Instructor, Amarillo College M.A.

7. Educational Committee

Chairman, Dr. Lucille Lynn, Department of English
Co-Chairman, William E. Raab, Dean of the College
Dr. Charles H. Clawson, Psychology and counseling, Amarillo College
Dr. Amogene DeVaney, Mathematics and Engineering of Amarillo College
Miss Edna Coy, Social Sciences of Amarillo College M.A.

GLOSSARY OF SELECTED HEALTH OCCUPATIONS *

BIO-MEDICAL EQUIPMENT TECHNICIAN--(BMET)--Assists the physician, scientist and medical engineer by assembling, adapting, and maintaining new kinds of devices and instruments involving both mechanics and electronics.

CERTIFIED LABORATORY ASSISTANT--(CLA)--Performs routine laboratory procedures in bacteriology blood banking, chemistry, hematology, parasitology, serology, and urinalysis under the direct supervision of medical technologists and a pathologist.

MEDICAL LABORATORY TECHNICIAN--(MLT)--This position under development which provides additional training beyond CLA in order to perform more complicated technological procedures e.g. gas analysis.

DENTAL ASSISTANT--Serves as receptionist--secretary, chairside assistant, does laboratory work and makes dental radiographs.

DENTAL HYGIENIST--Performs a specific service for patient by removing calcium deposits, secretion and stains from surfaces of teeth under the supervision of a licensed dentist. May also teach or do public health work.

DENTAL LABORATORY TECHNICIAN--Can assume the responsibility for the making of casts and constructing bridges and other protheses when ordered or prescribed by a dentist.

ECHO TECHNICIAN--Performs diagnostic testing of brain, cardiac, and fetal disease by the use of ultra sonic tracings.

ELECTROCARDIOGRAPHY TECHNICIAN--(ECG)--Works in a laboratory or at the patient's bedside operating an electrocardiograph machine which records heart action. Mounts tracings which are read or interpreted by a physician.

ELECTROENCEPHALOGRAPHY TECHNICIAN--(EEG)--Under the direction of a doctor, the E.E.G. technician records the brain waves of patients using practical electronics.

ENVIRONMENTAL HEALTH TECHNICIAN--Performs non-professional technical work under the general direction and guidance of environmental professionals. He may determine compliance with or violation of public sanitation laws and regulations. He may operate water and waste water treatment facilities and supervise inspectional and control programs.

HOME HEALTH AID/HOMEMAKER--Provides assistance in meeting certain at home needs frequently related to illness or disability under professional supervision of public health nurse, physical therapist, occupational therapist or social worker.

HISTOLOGIC TECHNICIAN--Cuts, fixes, stains and prepares slides for microscopic examination. Preserves pathological specimens.

HOSPITAL FOOD SERVICE SUPERVISOR--In small hospitals, this person may be in charge of the daily operation of food service, in larger hospitals working as an assistant under the direction of a dietitian or Food Service Manager handling the training and supervision of employees.

HOSPITAL FOOD SERVICE WORKER--Duties cover the whole range of food preparation--storing, preparing, and serving as well as dishwashing and kitchen cleaning.

HOUSEKEEPING SUPERVISOR--Directs and administers the housekeeping program. Must establish certain standards of cleanliness, work methods and schedules.

INHALATION THERAPIST--(Respiratory Technician, Oxygen Therapist--terms often used for non-certified positions)--Administers therapeutic gases ordered by the physician. Maintains equipment and supplies.

LICENSED VOCATIONAL NURSE--(LVN)--Give nursing care under supervision of Registered Professional Nurse or Physician to patient in simple nursing situation. Sometimes acts as an assistant to Registered Professional Nurse.

MEDICAL OFFICE ASSISTANT--(ADMINISTRATIVE-Secretarial)--Acts as receptionist, maintains appointments, maintains patient records, completes insurance forms, controls simple bookkeeping and acts as attendant in handling correspondence and reports.
(CLINICAL)--Assists in preparing patient for examination, maintains examing room, prepares and gives injections, performs certain testing, such as E.C.G. (electrocardiograph). Relates physicians' instructions to patients.

MEDICAL RECORD TECHNICIAN--(ACCREDITED RECORD TECHNICIAN)--Serves under direction of a R.R.L. in Med.Rec. Dept. With help may supervise small medical record department in a small hospital under the direction of the medical record committee and the administrator.

MENTAL HEALTH ASSOCIATE--Assists mental health professional in work with emotionally disturbed and mentally retarded persons.

NURSE AIDE OR NURSING ASSISTANT--Assists in patient care important to a patient's comfort in tasks such as answer patient's calls, help with meals and bathing, etc.

NURSE, REGISTERED (A.D.)--Prepared to function in hospitals as bedside nurses and in other health care facilities in first-level nursing positions.

OCCUPATIONAL THERAPY ASSISTANT--Instructs a patient in manual and creative arts and activities of daily living under the supervision of an occupational therapist.

OPTICIAN--(DISPENSING)--Assists patient in selecting eyeglass frames, fits and adjusts finished glasses.
(MANUFACTURING)--Grinds lenses according to prescription and fits them into the assembled frame.

ORDERLY--Works under the direction of professional nurses--bathing patients, delivering messages, making beds, and escorting patients to other departments of hospital. These services generally performed for male patients.

ORTHOPTIST--Works under the supervision of an ophthalmologist to teach patients certain eye muscle exercises which help misaligned eyes work together as they should.

PHYSICAL THERAPY ASSISTANT--Works under the supervision of a physical therapist to assist those suffering from illness and disability to regain physical function.

PROSTHETIST AND ORTHOTIST--(Prothetist)--takes measurements for, fabricates and fits artificial limbs, instructs patients in use of prosthesis. (Orthotist)--makes and fits braces, supports, and other orthepedic appliances. All appliances are made upon the prescription of a physician.

PSYCHIATRIC AIDE--Nurse aide or nurse assistant who attends psychiatric patients.

RADIOLOGIC TECHNOLOGIST or X-RAY TECHNOLOGIST--(RT)--Works under the supervision of a Radiologist to make X-ray exposures, adjusts controls and positions patients for therapy, develops x-rays, keeps records, makes reports and assumes responsibility for equipment and supplies.

SURGICAL TECHNICIAN--Prepares instruments, surgical packs, stands and hands instruments and surgical supplies to surgeon in operating room theater. (Services previously performed by "a scrub nurse.")

WARD CLERK--Works under graduate nurse supervision in nursing unit. May chart physician's orders and issue requisitions for lab and x-ray. Runs errands.

WARD MANAGER--Performs administrative duties comparable to those of a head nurse--assigning of patients, ordering of supplies, ordering drugs, completing reports.

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*Source--some of the definitions came from:
Indiana Health Careers, Inc., Opportunities Unlimited, Reprinted from the October, (1966) issue of Indiana State Board of Health Bulletin, Indianapolis, Indiana.

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